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ABSTRACT

This resource guide is designed to help educators find curricula, multimedia resources, and other educational materials that can enhance the teaching of environmental education in a variety of settings. Curriculum guides and other educational materials listed in this guide were evaluated by classroom teachers, content experts, and environmental educators. Each set of materials was reviewed by at least three people. Curriculum materials included in this compendium were evaluated using the Environmental Education Materials Guidelines for Excellence developed by the North American Association for Environmental Education (NAAEE). The write-ups were designed to point out the variety of factors an educator may wish to consider when deciding which materials are most appropriate for a particular group of students and how those materials might be used most effectively. The first section of this guide highlights approximately 50 environmental education curriculum materials. Each entry contains a summary of the curriculum information about grade levels, subject areas, author, publisher, and price; comments specific to the six key characteristics of quality environmental education materials according to the Guidelines for Excellence; and a sample of quotations from the reviewers' evaluation sheets. The second section contains an annotated listing of support materials. Appendices include a curriculum matrix, publisher index, and an author/editor index. (PVD)

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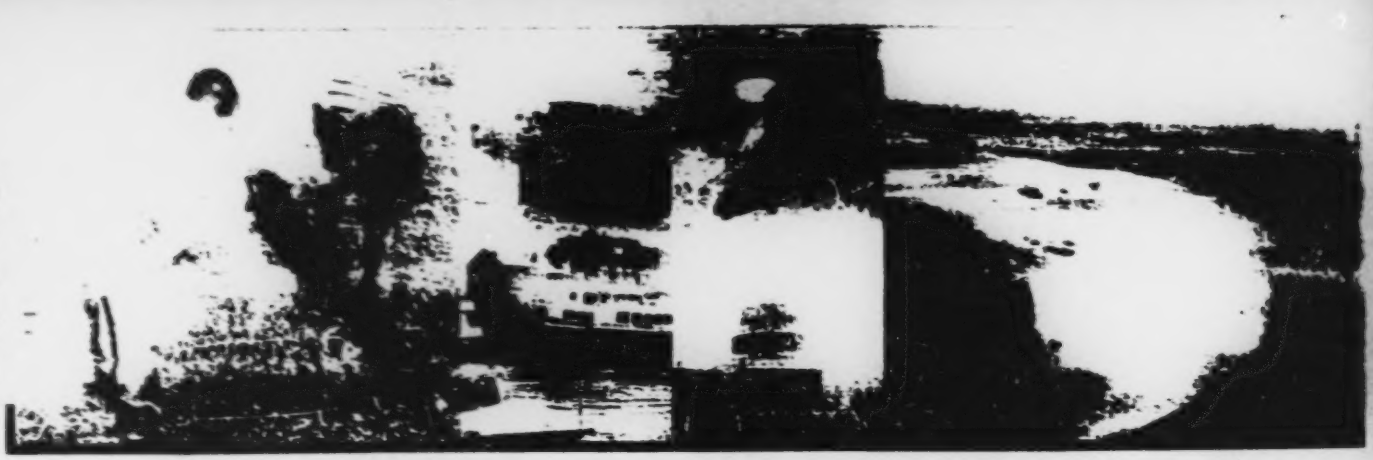

The Environmental Education Collection: A Review of Resources for Educators

Volume 2

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SE 061 751

North American Association for Environmental Education

The North American Association For Environmental Education

NAAEE is a network of professionals and students working in the field of environmental education throughout North America and in over 50 countries around the world. For more than 25 years, the Association has promoted environmental education and supported the work of environmental educators.

There are many environmental interest groups and many organizations dedicated to the improvement of education. NAAEE integrates these perspectives and takes a positive, cooperative, nonconfrontational approach to promoting education about environmental issues.

The Association is made up of people who have thought seriously —over lifetimes— about how people become literate concerning environmental issues. NAAEE members believe education must go beyond consciousness-raising. It must prepare people to think together about the difficult decisions they have to make regarding environmental stewardship, and to work together to improve and solve environmental problems.

NAAEE recognizes the need for a coherent body of information about environmental issues. Its members also recognize that information and analysis are only part of an effective education program. To be truly effective, this body of knowledge must be integrated into all aspects of the curriculum and into all types of educating institutions for the widest array of audiences.

In order to translate theory into reality and provide tangible support for environmental education and environmental educators, NAAEE engages in a variety of programs and activities: The annual conference at varying North American sites, an active publications program, the Environmental Education Training Institute, the VINE (Volunteer-led Investigations of Neighborhood Ecology) Network, the Environmental Issues Forums (EIF) program, NAAEE Skills Bank, and the Environmental Education and Training Partnership (EETAP).

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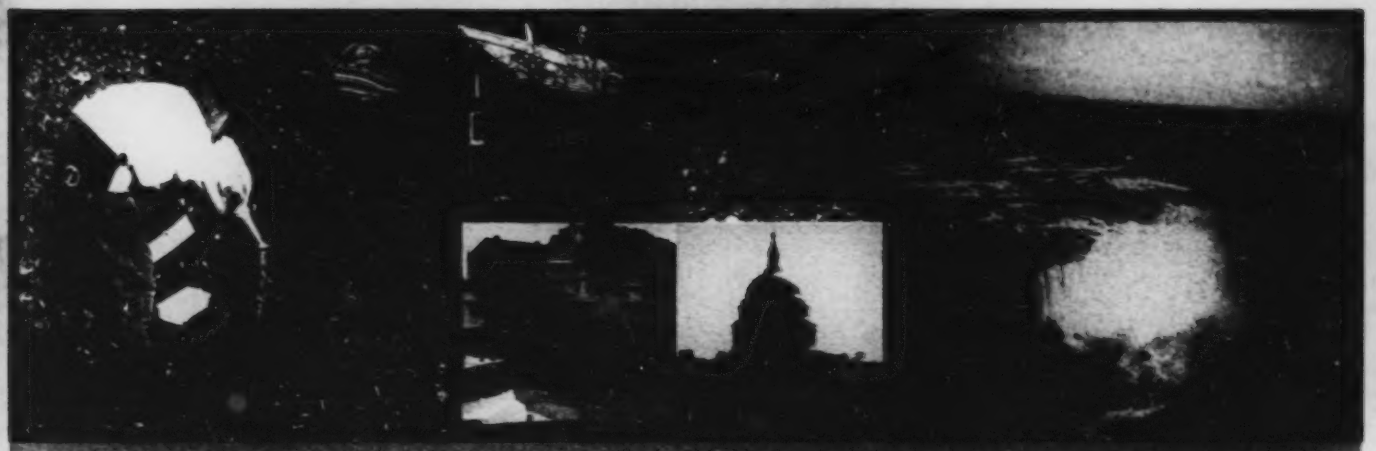

The Environmental Education Collection: A Review of Resources for Educators

Volume 2

North American Association for Environmental Education

The Environmental Education Collection — A Review of Resources for Educators Volume 2 represents another in a series of documents published by the North American Association for Environmental Education as part of the National Project for Excellence in Environmental Education.

National Project for Excellence in Environmental Education

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Special thanks to the teachers, curriculum developers, educational administrators, environmental education specialists, business and industry representatives, and environmental scientists who took time from their busy schedules to review the curriculum materials. We would also like to express our gratitude to Joseph Heimlich, Associate Professor at Ohio State University and Suzanne Spradling, at Oklahoma State University for hosting review sessions.

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The contents of this document do not necessarily reflect the views and policies of EPA nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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Additional copies of this book can be obtained from the NAAEE Publications and Membership Office, P.O. Box 400, Troy OH 45373, USA
Phone and fax: (937) 676-2514 e-mail: jthoreen@igc.apc.org web site: http: //www.naaee.org

ISBN # 1-884008-58-5

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Welcome

With literally thousands of education materials to select from, knowing which ones may be the best for a particular group of students can be a daunting task. *The Environmental Education Collection — A Review of Resources for Educators Volume 2* is designed to help educators find curricula, multimedia resources, and other educational materials that can enhance teaching environmental education in a variety of settings. It is our hope that this resource guide will assist educators as they plan, develop, and implement creative and effective environmental education programs. The *Environmental Education Collection* is intended to be the first in a series of resource guides. Each of these guides will provide background information and reviews of some of the most widely available environmental education materials.

How Was The Environmental Education Collection Developed?

In order to collect a broad range of educational materials (e.g., curriculum guides, CD-ROMs, laser discs, video tapes), letters were sent to commercial publishers, not-for-profit organizations, government agencies, and other organizations that produce environmental education curricula asking them to submit materials for review. Curriculum guides and other educational materials included in *The Environmental Education Collection — A Review of Resources for Educators* were evaluated by teams of classroom teachers, content experts, and environmental educators. Each set of materials was reviewed by at least three people. In those cases where reviewers disagreed, the materials were evaluated by at least one more person. Quite obviously, it would not be practical to review all of the environmental education curriculum materials that have been produced. Consequently, the materials included in this resource guide represent a small sample of resources available.

The Review Criteria

Curriculum materials included in this compendium were evaluated using the *Environmental Education Materials: Guidelines For Excellence* developed by the North American Association for Environmental Education (NAAEE). The *Guidelines* provide a set of criteria for developing and selecting environmental education materials. These guidelines aim to help developers of activity guides, lesson plans, and other instructional materials produce high-quality products, and to provide educators with a tool to evaluate the wide array of available environmental education materials. Developed through a process of critique and consensus, the *Guidelines for Excellence* is grounded in a common understanding of effective environmental education. Over 1000 individuals and organizations (e.g., teachers, educational administrators, environmental scientists, curriculum developers) participated in its development.

The *Guidelines for Excellence* point out six key characteristics of quality environmental education materials. A series of guidelines are listed for each of these characteristics. Finally, each guideline is accompanied by several indicators, which suggest ways of gauging whether the materials being evaluated or developed follow the guidelines. The complete *Guidelines For Excellence* can be ordered from the NAAEE Publications and Membership Office in Troy, Ohio.

Summary of the Guidelines

#1 Fairness and accuracy: EE materials should be fair and accurate in describing environmental conditions, problems, and issues, and in reflecting the diversity of perspectives on them.
- 1.1 Factual accuracy
- 1.2 Balanced presentation of differing viewpoints and theories
- 1.3 Openness to inquiry
- 1.4 Reflection of diversity

#2 Depth: EE materials should foster an understanding and appreciation of environmental concepts, conditions, and issues, as appropriate for different developmental levels.
- 2.1 Focus on concepts
- 2.2 Concepts in context
- 2.3 Attention to different scales

#3 Emphasis on skills building: EE materials should build lifelong skills that enable learners to address environmental issues.
- 3.1 Critical and creative thinking
- 3.2 Applying skills to issues
- 3.3 Action skills

#4 Action orientation: EE materials should promote civic responsibility, encouraging learners to use their knowledge, personal skills, and assessments of environmental issues as a basis for action.
- 4.1 Sense of personal stake and responsibility
- 4.2 Self-efficacy

#5 Instructional soundness: EE materials should rely on instructional techniques that create an effective learning environment.
- 5.1 Learner-centered instruction
- 5.2 Different ways of learning
- 5.3 Connection to learners' everyday lives
- 5.4 Expanded learning environment
- 5.5 Interdisciplinary
- 5.6 Goals and objectives
- 5.7 Appropriateness for specific learning settings
- 5.8 Assessment

#6 Usability: EE materials should be well designed and easy to use.
- 6.1 Clarity and logic
- 6.2 Easy to use
- 6.3 Long lived
- 6.4 Adaptable
- 6.5 Accompanied by instruction and support
- 6.6 Make substantiated claims
- 6.7 Fit with state or local requirements

Using The Environmental Education Collection

As a set of review criteria, the *Guidelines for Excellence* offers a standard to aim for when considering materials, and a set of ideas about what a well-rounded environmental education curriculum might be like. It is not reasonable to expect that all environmental education materials will follow all of the guidelines. For example, a set of materials might not present differing viewpoints, as outlined in guideline #1.2. This shortcoming does not necessarily mean that the materials should not be used. An instructor could work them into a larger set of activities that explores different viewpoints and helps learners discern opinion and bias in individual presentations of the issue. Likewise, a curriculum project that focuses on the science behind water ecology might not include a discussion of social issues, but may still be used effectively as a science resource within a larger unit on water-related issues.

The write-ups included in *The Environmental Education Collection — A Review of Resources for Educators* were designed to point out the variety of factors an educator may wish to consider when deciding which materials are most appropriate for a particular group of students and how those materials might be used most effectively. Of course, no set of evaluations can be complete, and some important considerations are bound to be missing. Although the reviewers made every effort to evaluate the materials using their professional judgement and their best understanding of the *Environmental Education Materials: Guidelines for Excellence*, it should be understood that the reviews are not perfect. Given this, *The Environmental Education Collection — A Review of Resources for Educators* should be used as a tool to inform decisions, contributing to more effective environmental education.

As you review the write-ups, keep these things in mind:

- The reviewers highlighted strengths, and weaknesses or constraints they felt other educators would want to know about before purchasing a resource. It is important to point out that what one reviewer might consider a weakness, another might consider a strength. At the same time, some reviewers felt more strongly about some issues than other reviewers. The write-ups are meant to guide you and that you need to read the entire review to get a feel for the curriculum.

- If the materials were not designed to meet one of the key characteristics, this was noted in the write-up.

- Each item reviewed in this compendium was produced by an organization, agency, business or other institution that has its own goals, mission, and agenda. Many different kinds of organizations produced outstanding materials and all materials contained a certain perspective—just by the emphasis on certain subjects, activities, values, and methods.

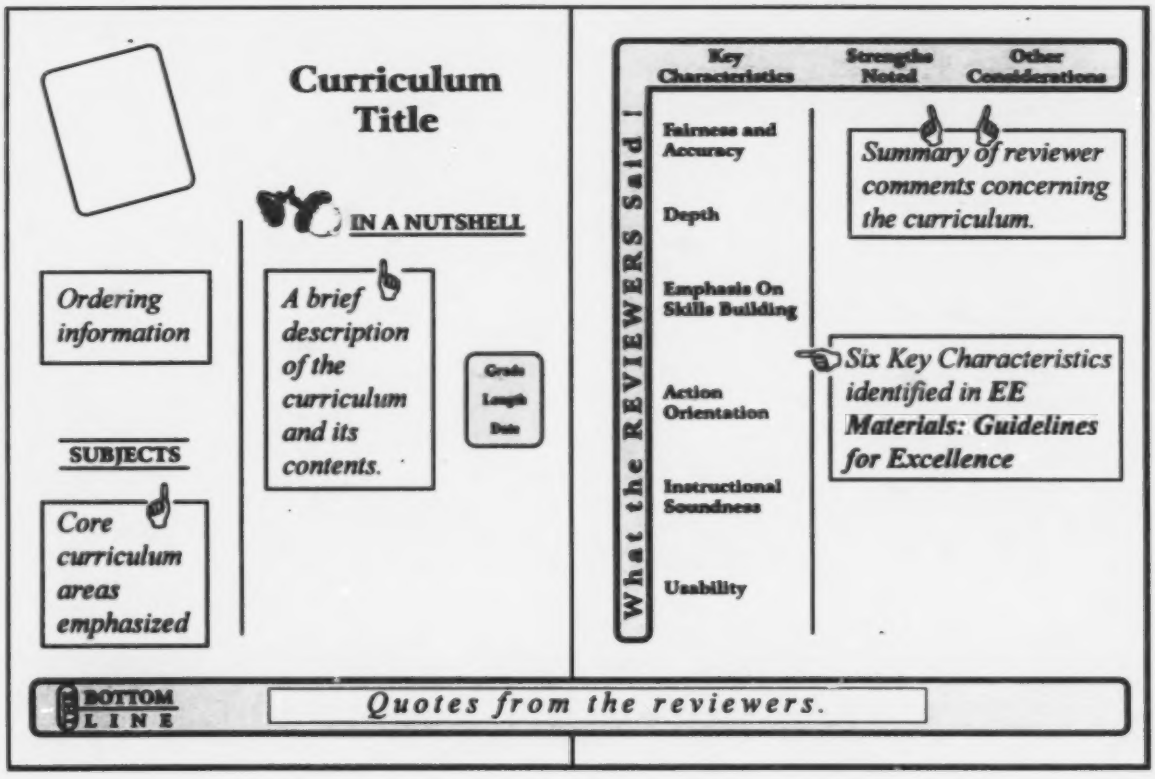
- The key to effective education lies with educators. A mix of resources have been included in this guide to help educators select the materials that will help them build educationally sound units and programs.

- As much information as possible was included to help users find and order the materials. However, items such as prices, phone numbers, and addresses will often change. If you find an error, please let us know.

- Major subject areas, are also included.

About This Collection

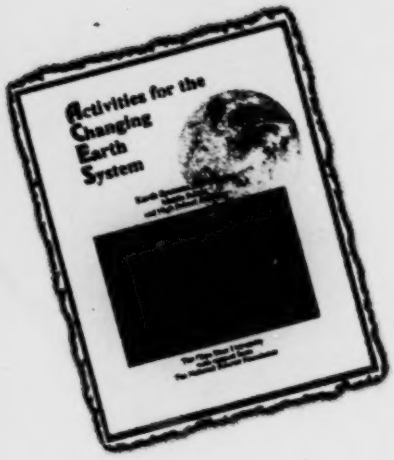
The first section of this resource guide highlights approximately 50 environmental education curriculum materials. Entries are listed in alphabetical order. Each entry contains a summary of the curriculum (In a Nutshell), information about grade levels, subject areas, author, publisher, and price, comments specific to the six key characteristics (What the Reviewers Said!), and a sample of quotations from the reviewers' evaluation sheets (The Bottom Line). The second section contains an annotated listing of support materials. Following this section is a matrix that cross-lists all of the materials and various characteristics (e.g., grade level(s), topics covered, subjects). Finally, we have included a short Feedback Form. Since we plan to produce future volumes in this series, we would appreciate your input.



Reviews

The following materials were reviewed using *Environmental Education Materials: Guidelines for Excellence.* The synergy between the various parts — the summary of reviewer comments, the subjects, the brief description of the curriculum, and the reviewers' quotes — creates the richness and integrity of the reviews. It is strongly recommended that educators read both pages of each review in order to take in the full flavor of the curriculum.

The following reviews are provided to allow individual educators to make their own decisions about the materials and to determine how they can best be used.



Activities for the Changing Earth System

Written by: Rosanne Fornter, Victor Mayer, & David Elliot

Earth Systems Education Program
The Ohio State University
2021 Coffey Road
Columbus, OH 43210-1078

phone: (614) 292-1078
fax: (614)292-7432
website: http://www.ag.ohio-state.edu/-earthsys

Cost: $10.00

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science

IN A NUTSHELL

The twenty activities in this book address a number of environmental issues and topics, and investigates them under the framework of Earth Systems Education. This framework recognizes seven Earth Science Understandings (ESUs) about the earth and looks at the interaction of five subsystems (atmosphere, biosphere, cryosphere, hydrosphere and lithosphere) as a means for the scientific study of global environmental issues. The topics addressed include endangered species, deforestation, climate change, and biodiversity. Each activity includes objectives, description of materials needed, an explanation of the procedure (including discussion questions), questions for extended study, teacher background, references, and the relevant ESU for the lesson. The text includes student study sheets and reference fact sheets, and is illustrated with maps, black-and-white photographs, charts, and drawings. Activities are sorted for middle and high school students and include games, quizzes, simulations, and discussions.

Grade Level
6-12

Length
291 pages

Date Published
1993

THE BOTTOM LINE

"Strong earth-science, chemistry, physic-centered instruction. Effective use of the scientific process."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Clearly cites references. Reflects a variety of settings (urban, rural, suburban). Developed and reviewed by teachers and scientists.	Many sources are dated. Does not always appear to present varied viewpoints. Presents limited cultural diversity and little attention to economics.
Depth	Lessons involve math, biology, chemistry and physics. Concepts presented in appropriate context and in terms of local and global scales.	
Emphasis on Skills Building	Develops critical thinking skills and application of skills to issues.	Development and application of skills are more evident in extension exercises than in lessons.
Action Orientation	Not Applicable.	
Instructional Soundness	Approach involves opportunities for cooperative learning. Includes both qualitative and quantitative evaluations. Makes connections to learner's lives.	Some lessons are rather long and would require more than one session.
Usability	Material is very teacher-oriented. Provides helpful background information and objectives for each lesson. Individual lessons can be adapted to an existing curriculum.	Layout and format make use difficult. Use of acronyms is distracting.

"Includes some very innovative activities."

"Many lessons start out soundly, but then fall short by making assumptions and feeding them to the students."

Aluminum Beverage Cans:
The ABC's of Environmental Education

Can Manufacturer's Institute
1625 Massachusetts Ave. NW
Washington, D.C. 20036

phone: (888) Can-Central
(202) 232-4677
fax: (202) 232-5756
website: www.cancentral.com

Cost: No Charge

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This curriculum uses aluminum cans and recycling as a springboard for teaching about a number of environmental concepts. The main text begins by providing background information on aluminum, the history of can packaging, and additional background information for both teachers and students. The next section presents seven lessons dealing with such subjects as packaging, the recycling process, setting up an action project, and exploring the benefits of recycling aluminum. Both classroom and field-based lessons are included. Each lesson includes background, objectives, vocabulary, preparation and class time required, teacher tips, wrap-up and extension activities, and references. The kit also includes a poster, samples of different can lids, and an instruction manual for participation in a nationwide recycling competition. The text is illustrated with drawings, charts and timetables.

Grade Level
intermediate

Length
76 pages

Date Published
1997

THE BOTTOM LINE

"Skills learned are applicable to real life, which increases the chance of retention."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Wide variety of experts involved in peer review. Material is current and open to inquiry. Frequently presents both sides of issues.	
Depth	Specifically addresses concepts to be taught. Addresses both local and global scales.	Weak on describing long-term effects.
Emphasis on Skills Building	Emphasizes critical thinking. Encourages students to come to their own decision.	
Action Orientation	Helps learners to develop a sense a personal responsibility. Makes curriculum relevant to local community.	
Instructional Soundness	Clearly lists subject areas. Encompasses different ways of learning.	Minimal use of the outdoors for instruction.
Usability	Information is clear and logical. Instructional support and references are provided. Needed materials are inexpensive and easily obtained.	Unclear if recycling competition is a yearly event.

"It seems like there is almost too much information, and the student may get wrapped up in learning about the background versus the activity."

"I enjoyed the layout and the ideals of this program."

Arctic Animals:
Teacher's Guide

Written by: Sydney Donahoe &
Judith Swift

Sea World
500 Sea World Drive
San Diego, CA 92109-7995

phone: (800) 23-SHAMU
TDD: (800) TD-SHAMU
Fax: (619) 226-3634
website: http://www.seaworld.org

Cost: K-3 Teacher's Guide $7.00
4-8 Teacher's Guide $7.00

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This set of two teacher's guides, one for grades K-3 and one for grades 4-8, which provides materials and instructions for a complete unit about the arctic and the animals who live there. The guides begin with a list of eight learning objectives and a vocabulary list, and conclude with a bibliography and pre/post assessment tools. Each booklet includes thirteen or fourteen activities about the arctic habitat, its location, its fauna, and some of the issues facing the arctic region. Activities include an objective, brief background information, a list of materials needed, and a description of the activity. Types of activities include discussions, investigations, experiments regarding snow and cold, and a simulation game. Some activities occur in slightly altered form in both books. The booklets include student data sheets and masters, cards and handouts, and are illustrated with maps, photographs, drawings and graphs.

Grade Level
K-3, 4-8

Length
24 pages each

Date Published
1995

THE BOTTOM LINE

"Presents a balance of information, although some wording may be construed as slanted."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information is current. Looks at different cultures and social contexts.	Information sources identified only in a general way. Role of scientific advisors not stated. Some of the language used indicates a bias.
Depth		Activities do not address some of the goals of the curriculum. Does not provide theme to tie the different activities together.
Emphasis on Skills Building	Develops basic science and laboratory skills. Provides opportunities to use critical and creative thinking skills.	Very little attention to problem-solving or defining issues, or to the relationship between the activities and solutions to environmental issues.
Action Orientation	Suggestions for action are given in the introduction and background information.	Little emphasis on evaluating choices.
Instructional Soundness	Uses a variety of learning/ teaching methods. Draws on different disciplines and subjects. Goals and objectives are clearly stated.	Does little to encourage learner to question or to conduct their own inquiry. Activities are largely classroom based. Connections to learners' lives are not strongly made.
Usability	Materials needed are generally available to teachers. Material is clearly written, instructions are easy to understand.	Background information not always sufficient. Material is disjointed at times.

"This material would be easy to pick up and use and to integrate into a curriculum."

"Not a lot of substance to this guide. It covers a wide range of topics but on a superficial level."

Botany for All Ages

(Second Edition) Discovering Nature Through Activities for Children and Adults

IN A NUTSHELL

Written by: Jorie Hunken & The New England Wild Flower Society

The Globe Pequot Press
P.O. Box 833
Old Saybrook, CT 06475

phone: (800) 243-0495
fax: (800) 820-2329
website:
http://www.globe-pequot.com

Cost: $16.95

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science

This books is a collection of 128 activities regarding plants, plant adaptations, and plant ecology. The text is divided into three parts. The first part, "Introduction to Teaching with Plants," contains 26 activities involving sensory awareness, teaching skills, and development of teaching tools. It is intended as an introduction to environmental education. The second part, "Activities for Learning about Plants," consists of 45 exploratory activities including art projects, experiences in growing plants from seeds, experiments with fertilization, ripening and growth, and studies of seed adaptations. The final section, "Various Parts of Plants: Names and Functions," includes activities addressing particular parts of plants (such as roots, veins or leaves), and the interaction of plants with other elements of their habitat and environment. The book includes a glossary, bibliography, and an index. It is illustrated with photographs, diagrams, drawings, and worksheets.

Grade Level
K-Adult

Length
184 pages

Date Published
1993

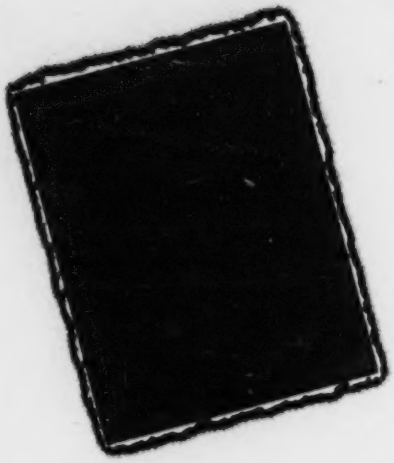
THE BOTTOM LINE

"This is an excellent resource book for studying botany."
"Very comprehensive for an action-based outdoor classroom."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Very fact-based. Offers some insights into diverse cultural influences on the uses of plants.	
Depth	Provides many activities dedicated to awareness. Fits activities into a loose conceptual framework.	
Emphasis on Skills Building	Strong on observation and experimentation.	
Action Orientation	Not Applicable.	
Instructional Soundness	Activities are hands-on and involve different learning situations.	Goals and objectives not clearly stated. Teacher would need to develop student directions and procedures.
Usability	Instructions are easy to follow.	Most of the examples are of plants from the Eastern US — few western plants are used.

"This material requires the student to explore the environment and draw conclusions about a plant's ability to grow; it then offers opportunities to illustrate whether or not the child's conclusions are true."



Closing the Loop

Integrated Waste Management Activities for School and Home

Written by: Joseph H. Chadbourne

Chadbourne & Chadbourne
18554 Haskins Road
Chagrin Falls, OH 44023-1823

phone: (800) 484-7949+1993
(216)-543-7303
fax: (216) 543-7160
e-mail:
mm_jhchadbourne@compuserve.com

Cost: $32.00
no charge to Californians

SUBJECTS

Economics
Fine Arts
Health
Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This is a collection of forty-five activities, each identified for an appropriate grade level, dealing with solid waste issues and related problems and concepts. The activities are grouped under three thematic headings: everything ends up somewhere; we have options and make choices; and everything is connected. The material includes a substantial background section which discusses the thematic framework and goals of the lessons. Examples of topics include the study of alternatives to incineration, audits of students' homes for waste and toxics, consumer attitudes, vermicomposting, and the properties of recyclable plastics. For each activity there is a brief statement of the objective, method, background information, subjects, format, discussion questions, and suggestions for further study. Included are illustrations (drawings), handouts, diagrams, charts, worksheets, and teacher answer sheets. The appendix includes teacher background, a series of fact sheets, and a glossary. Califonia companion pages are available in both English and Spanish.

Grade Level
K-12

Length
500 pages

Date Published
1993

THE BOTTOM LINE

"I would like to see a workshop to introduce this material to teachers. There is so much here that it could be overwhelming."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Provides historical as well as current information. Includes numerous points of view on subjects.	Could do a better job of addressing inclusion with respect to culture and ethnicity.
Depth	Looks at local and global consequences. Clearly states and incorporates concepts.	
Emphasis on Skills Building	Activities develop communication, problem solving, creative and critical thinking skills. Makes use of scientific method.	
Action Orientation	Many activities help students see the results of their actions. Stresses individual responsibility	
Instructional Soundness	Emphasis is on learner-centered instruction. Clearly defines learning objectives.	Some principles may be too advanced for the identified age groups.
Usability	Provides helpful background information. Three-ring binder makes material easy to use and copy.	

"This curriculum integrates a number of learning styles with a variety of experiences and activities."

"A curriculum which may be appropriate for young children or students with disabilities."

Cycling Back to Nature: Soils Alive! From Tiny Rocks to Compost

Written by: Robert L. Horton, Joseph E. Heimlich, James R. Hollyer, & Bill Owen

National 4-H Supply Service
7100 Connecticut Avenue
Chevy Chase, MD 20815-4999

phone: (301) 961-2934
fax: (301) 961-2937
website: http://www.fourhcouncil.edu/

Cost: $5.00

SUBJECTS

Science
Social Studies

IN A NUTSHELL

This is a collection of lessons designed to teach students about rocks, minerals, soil, and a number of issues related to soil use. The book begins with a general description of soil's inorganic components, then discusses the organic elements, how living organisms interact with soil, and our own dependence on the soil and its health. It ends with a unit on composting. The nineteen principal activities are experience-based, and involve the students in such tasks as testing the hardness of minerals, observing the different kinds of decomposition, and searching for earthworms in samples of soil. The lessons list key concepts, materials needed, time for preparation, interesting facts for the teacher, vocabulary, follow-up activities, guiding questions, and suggestions for bridges between lessons. The book also includes pedagogical suggestions, activity sheets for students, a glossary and a list of resources. The lessons can be taught in as few as six one-hour sessions.

Grade Level
5 & up
Length
60 pages
Date Published
1995

THE BOTTOM LINE

"A well-written, interdisciplinary curriculum with excellent hands-on activities."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information appears to be factual.	Sources of information not cited. Material not made relevant to urban populations.
Depth	Presents concepts in context. Activities build on one another.	
Emphasis on Skills Building	Develops critical and creative thinking skills. Includes using cost/benefit anaiysis.	
Action Orientation	Empowers students to take action locally. Instills sense of personal responsibility.	Seems to assume students have access to needed materials and resources.
Instructional Soundness	Material is made relevant to learner's everyday lives. Learner-centered instruction.	Little emphasis on interdisciplinary ties.
Usability	Format is clear and easy to use. Materials are long-lived. Easily adaptable to a variety of uses.	Intended audience not clearly stated.

"Nothing is mentioned about inner-city children who might see plenty of garbage."

"Provides a teacher with hands-on science and composting activites."

Discovering Salmon:

A Nature Activity Book

Written by: Nancy Field & Sally Machlis

Dog-Eared Publications
P.O. Box 620863
Middletown, WI 53562-0863

phone/fax: (888) 364-3277
(608) 831-1410
website: http://www.dog-eared.com

Cost: $4.95

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science

IN A NUTSHELL

This book contains a number of activities designed to teach younger children about the life cycles and natural history of salmon. Some pages are largely narrative and introduce students to fish migration or ocean ranching; combine text, charts, maps, and black and white drawings. The majority of the book is made up of games, stories, word problems, cross-word puzzles, word searches, mazes, coloring exercises, and other activities to encourage or reinforce learning. Among the topics addressed are migration, acid precipitation, changes in salmon population, the effects of introduced species on an eco-system, food chains, and fish adaptations. A Native American story of the Salmon People from the Pacific Coast is included.

Grade Level
4 (adaptable)

Length
32 pages

Date Published
1996

THE BOTTOM LINE

"A nice resource for individual work."

"Could easily be used with little prior background."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information was reviewed by specialists in the field. Information appears accurate and fair.	Does not cite specific references.
Depth	Relates salmon to the food chain.	Attempts to cover too much information too briefly. Lacks a conceptual framework.
Emphasis on Skills Building	Some of the games and activities encourage creativity.	Does not involve learner in discovering outcomes.
Action Orientation	Not Applicable.	
Instructional Soundness	Includes a diversity of activities from different subjects.	Does not define objectives or goals. Information is not made directly relevant to learners.
Usability	Material is easy to use and long-lived.	Some graphics and maps may be difficult to use with children. Intended age level not stated.

"Doesn't sufficiently address threats to salmon populations."

"Useful as an extension of an aquatics unit."

Discovery Curriculum

The National Arbor Day Foundation
100 Arbor Avenue
Nebraska City, NE 68410

phone: (888) 448-7337
(402) 474-5655
fax: (402) 474-0820
website:
http://www.arborday.org

Cost: $19.99
item #2438

SUBJECTS

Language Arts
Science

IN A NUTSHELL

This curriculum was developed to promote stewardship of the environment by teaching sound scientific principles. The material is divided into three levels, each with a particular goal and emphasis. Level 1 addresses awareness, Level 2 expands the learner's knowledge base to understand the interrelationship of living and nonliving elements in a given environment, and Level 3 focuses on action. For each level, a description is given of the information, concepts and vocabulary to be taught, along with suggested experiments and demonstrations. References are made to specific activities from other sources, many of which are reprinted in the resources section along with student pages and handouts. Also included is a narrative of the curriculum as taught by Mrs. Ortega, a fictional composite instructor, at the Discovery Camp where the curriculum was developed. The material also includes ten one-page student investigations, where students are challenged to develop hypotheses and experiments to explain natural phenomena. The text includes an overview of the curriculum and a list of references, and is illustrated with photographs, drawings, and charts.

Grade Level
middle school

Length
224 pages

Date Published
1996

THE BOTTOM LINE

"This curriculum builds the students' knowledge base before entering a discussion of beliefs and values."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information is inquiry-based. References are provided. Illustrations show diverse student body.	Does not list reviewers of curriculum.
Depth	Lessons build upon earlier learnings. Strong focus on concepts.	Pays little attention to social issues and how environmental issues affect individuals.
Emphasis on Skills Building	Develops skills of collecting and analyzing data and using the scientific method.	
Action Orientation	Names environmental stewards who were able to effect change. Students are encouraged to locate and interview those in charge of projects.	
Instructional Soundness	Demonstrates a variety of learning styles. Clearly states objectives.	
Usability	Material is well laid-out, easy to use, and long-lived.	Does not contain a concise materials list for teachers.

"Although designed for the outdoors, it can be adapted to a number of settings."

"Allows students to identify and develop their own solutions."

Diversity of Life:

Teacher's Guide

Written by: Suzanne Sbrocco

Sea World
500 Sea World Drive
San Diego, CA 92109-7995

phone: (800) 23-SHAMU
TDD: (800) TD-SHAMU
fax: (619) 226-3634
website: http://www.seaworld.org

Cost: $7.00

SUBJECTS

Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This teachers' guide contains twelve activities and supporting materials to help classroom instructors teach the basics of animal taxonomy and classification in the context of marine life. The lessons begin with an overview of the Linnaean system of classification, and go on to provide several opportunities for students to practice classification and to become familiar with the phyla and classes. Subsequent lessons become more detailed in describing and identifying animal characteristics and adaptation, as well as the interactions of animals with their habitats. The final chapters address biodiversity and possible consequences of habitat loss. Each activity lists the objective, materials needed, background information, answers to questions posed to students, and suggestions for extensions or adaptations. The text is illustrated with photographs and drawings and includes a vocabulary list and bibliography.

Grade Level
7-12

Length
26 pages

Date Published
1995

THE BOTTOM LINE

"The unit is easy to use and provides most of the key information educators need to make it user-friendly."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Debate gives students opportunity to explore both sides of an issue.	Background information on biodiversity could be limiting. Does not list affiliation or qualifications of advisory board.
Depth	Provides solid basis for understanding Linnaean system.	Discusses fauna only. Fails to tie in economics or political considerations.
Emphasis on Skills Building	Develops classification, research, and some creative thinking skills.	
Action Orientation	Not Applicable.	
Instructional Soundness	Lessons are interdisciplinary and address different learning styles. States goals and objectives. Lessons build on previous learnings.	Little opportunity for students to initiate inquiry. Material not always made relevant to students.
Usability	Instructions are clear and logically organized. Material should be long-lived.	Does not list time requirements, grade level, or skills required for each lesson.

"Best serves as a resource to support instruction in biological classification and not as a stand-alone product."

"Material is informative, creative, and should inspire interest in students."

Earthcycles

Environmental Education with Preschool Children

Written by: Mavis Lewis-Webber

Earthcycles
729 Clifton Street
Winnipeg, Manitoba R3G 2X7
CANADA

phone: (204) 586-8587
e-mail:
maverand@mb.sympatico.ca

Cost: $10.00 Canadian

SUBJECTS

Science

IN A NUTSHELL

This book is designed for early childhood educators and specifically addresses those employed in child-care centers, kindergartens, and nursery schools. The fourteen activities provide opportunities to directly involve young children in activities with nature and expose them to the notion that all living and non-living things go through cycles of change. Types of activities include discussions, demonstration, experiments, exploration and crafts. Developing appreciation for the natural world and fostering respect for animals, plants, and inanimate objects are among the goals of the program. Specific activities include searching for earthworms, identifying wildflowers, constructing and maintaining a simple aquarium, and exploring ways to reduce one's production of garbage. Each activity includes brief background information, suggestions for preparation, ideas for additional activities, and a list of resources. A selected bibliography is also provided.

Grade Level
preschool
Length
19 pages
Date Published
1993

THE BOTTOM LINE

"Very broad, contains numerous activites which are fairly simple. Includes a wide range of topics."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Promotes openness to inquiry. Information is factually accurate.	
Depth	Stresses awareness of the natural world, including observation over time.	
Emphasis on Skills Building	Encourages creative thinking and observation skills.	
Action Orientation	Issues and possible activities are introduced at an appropriate age level.	
Instructional Soundness	Uses expanded learning environment. Material is relevant to students' everyday lives.	Does not define important vocabulary words.
Usability	User friendly. Instructions are simple. Minimal preparation time required.	Provides too little basic information for teachers without a strong science background.

"This is a convenient, easy-to-use module, well designed for preschool."

"Well done. Just the right amount for a preschool unit."

The Ecology of Creatures We Love to Hate

Written by: Judith M. Hancock

J. Weston Walsh, Publisher
321 Valley Street
P.O. Box 658
Portland, ME 04104

phone: (800) 341-6094
(207) 772-2846
fax: (207) 722-3105
internet:
http://www.walsh.com

Cost: $16.95

SUBJECTS

Language Arts
Science

IN A NUTSHELL

This book contains both teacher and student materials for a unit on commonly unwanted and unpopular creatures. The list of organisms includes gulls, molds, algae, weeds, snakes, rats, caterpillars, slugs, and mosquitoes. The first part of the book is the teacher's guide, and provides an explanation of the lessons and suggestions for using and grading the material. The student pages include a lessons in ecology which touch on such topics as introduced species, human values, population size fluctuations, and the effects of pesticides. The third and longest part of the book contains material necessary for student teams to conduct investigations of these creatures and to put together classroom presentations as part of a town meeting on nuisance species. For each species, a section is included which discusses the life history of the organism and lists learning goals for the student teams. Suggestions are provided for investigations, activities, research, references, and people to contact for more information. An appendix addresses the use of live animals in classrooms.

Grade Level
7-12
Length
108 pages
Date Published
1995

THE BOTTOM LINE

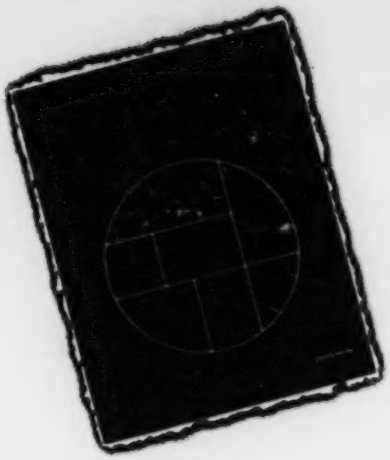
"These lessons will help students look at some species they encounter out of the classroom with a new perspective."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Presents differing perspectives about animals. Encourages openness to new ideas from a variety of sources.	Benefits of species could have been emphasized more.
Depth	Presents concepts in context. Students explore by interviewing local resources.	
Emphasis on Skills Building	Focus is on critical and creative thinking, research, group work, communication and presentation skills.	Lacks laboratory and field science activities.
Action Orientation	Not Applicable.	
Instructional Soundness	Activities are open-ended and learner centered. Allows groups to determine their own learning goals.	Few hands-on activities, follow-up activities, or ties to other disciplines.
Usability	Material is clear, straightforward, long-lived, and adaptable. All materials can be reproduced.	Organisms may not be easy to obtain.

"A great introduction to scientific objectivity."

"An excellent resource for utilizing students' curiosity and gut reactions to generate interest in scientific information."



Economics and the Environment: EcoDetectives

IN A NUTSHELL

This curriculum addresses environmental issues from the perspective of economic decision making. Four principles are used throughout the eighteen explorations: People's choices influence the environment; people's choices have unintended results; people's choices are influenced by rewards; and people are more likely to take better care of things they own and value. These four principles are used to help students explore "ecomysteries," which are dilemmas or puzzles involving issues such as protection of endangered species, population growth, and pesticide use. Each activity includes background information, a brief description of the applicable economic forces behind the issue, specific questions, transparency masters, answers to questions and quizzes, and recommendations for journaling, assessment and essays. Time requirements, materials needed, objectives, and concepts are also listed. Activities consist of surveys, radio plays, statistics analysis, readings, and mathematical problems.

Grade Level
middle school
Length
128 pages
Date Published
1997

Written by: Mark C. Schug, John S. Morton & Donald R. Wentworth

National Council on
Economic Education
Order Department
1140 Avenue of the Americas
New York, NY 10036

phone: (800) 338-1192 ext. 763
(212) 730-7007 ext. 763
fax: (212) 730-1793
website: http://
www.economicsamerica.org

Cost: $29.95

SUBJECTS

Economics
Language Arts
Mathematics
Science
Social Studies

THE BOTTOM LINE

"The role of economics in finding solutions to environmental problems is central but not exclusive, and should be taught in the context of other theories and opinions."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Covers many topics underrepresented in other materials.	Not open to inquiry, except within constructs of the four stated principles. Opposing theories are not presented. Many sources of information are not cited.
Depth	Economic concepts are clearly articulated. Places some issues in larger context.	Focus on privatization and free-market-based incentives.
Emphasis on Skills Building	Students practice risk analysis, cost/benefit analysis, critical thinking, comparing, interviewing, and writing skills.	At times leads students to a specific answer.
Action Orientation	Encourages learners to reflect on their actions. Stresses that choices influence outcomes.	
Instructional Soundness	Strong connection to learners' everyday lives. States goals and objectives.	Not learner-centered or multidisciplinary. Most activities are classroom-based.
Usability	Instructions are clear and easy to follow. Does not require complicated equipment or supplies.	Age ranges could be more clearly defined.

"Details public gain at private expense, but fails to detail private gain at public expense."
"A creative teacher who could expand on some of the narrow presentations could use this to supplement an environmental text."

Environmental Resource Guide:

Nonpoint Source Pollution Prevention

Written by: Air and Waste Management Association Education Council

Customer Service
P.O. Box 1020
Sewickley, PA 15143

phone: (800) 275-5851
(412) 741-1288
fax: (412) 741-0609

Cost: $20.50 for Air & Waste Management Association Members
$30.50 for non-members

SUBJECTS

Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This material consists of fifteen activities designed to educate youth about the unique challenges associated with nonpoint source pollution. The activities are intended to blend with existing curricula in the areas of science, math, social science, and language arts. Each is organized to state objectives, provide background information, and explain the procedure. Each is labeled for subject, time required, and materials needed. Activities address nonpoint source pollution in agriculture, residential areas and households, forestry, industry, and by private individuals. Students engage in activities such as developing a model farm to study runoff or a septic tank (leachates), and simulating clearcutting and selective cutting forestry practices using grass seeds. The guide also contains a glossary and ten fact sheets providing background information on water pollution, water quality factors, management options, and individual actions. The material is provided in a three-ring binder for easy use. Parallel modules are available for grades K-2, 3-5, and 9-12.

Grade Level
6-8

Length
107 pages

Date Published
1992

THE BOTTOM LINE

"Any teacher should be able to use this resource with little difficulty and feel comfortable about outcomes."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Facts appear accurate, up to date.	Presentations do not always balance different viewpoints. Labels alternatives as good or bad.
Depth	Presents concepts in useful and logical order. Activities help support concepts.	Few links to social and economic issues.
Emphasis on Skills Building	Provides some critical and creative thinking skills, research skills, some testing (pH, temperature).	Emphasis on simulated gathering of data. Students not encouraged to define or investigate problems for themselves.
Action Orientation	Some opportunities for action but not a major emphasis.	Seems to identify *others* who are responsible, rather than looking at personal behavior or choices.
Instructional Soundness	Includes some out-of-doors activities. Provides specific directions for different grades. Objectives are stated clearly.	Some activities do not appear to be age-appropriate. Relies heavily on reading and lecture.
Usability	Materials are largely simple and free or inexpensive. Masters are clear. Clearly defines objectives, goals, materials, and time.	Fails to provide safety instructions for potentially dangerous activities.

"There is a wide range of difficulty in these lessons, from extremely challenging to extremely simple."

"Children will conclude that they can do nothing but proselytize to their parents."

Environmental Science Activities Kit

Ready-to-Use Lessons, Labs & Worksheets

IN A NUTSHELL

This is a collection of thirty-two activities designed for use in classrooms or on school grounds. Ranging from twenty minutes to several hours in length, the activities cover a range of environmental issues including land use, nuclear power, water treatment, global warming, nuclear power, soil compaction, effects of mining, and the presence of toxics in the home. Activities include discussions, creation of models, experiments, research projects, and presentations. The text lists an activity summary, introduction, time requirements, student groupings, outcomes, materials required, vocabulary, and teacher preparation instructions for each activity. Also included are student handouts, activity pages, answers to quizzes and exercises, extensions and modification of activities, safety suggestions, references, a bibliography, and tips for writing letters to public officials.

Grade Level
7-12
Length
332 pages
Date Published
1993

Written by: Michael L. Roa

Simon & Schuster
Order Department
200 Old Tappan Road
Old Tappan, NJ 07675

phone: (800) 288-4745
fax: (800) 445-6991
website: http://
www.simonandschuster.com

Cost: $29.95

SUBJECTS

Mathematics
Science
Social Studies

THE BOTTOM LINE

"Well thought-out activities with sound rationale. That the emphasis is on no single solution is a big plus!"

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Material is open to inquiry and encourages students to collect information and make their own decisions.	Some statistics do not have sources cited and seem to be quoted out of context.
Depth	Strong focus on concepts. Addresses both local and global situations.	
Emphasis on Skills Building	Promotes data collecting and organizing, drawing conclusions, decision making, and problem solving. Includes group work, discussions and debates.	Possibility exists for accurate student data to be labeled "wrong."
Action Orientation		Gives few examples of successful actions.
Instructional Soundness	Includes range of instructional methods. Many outdoor activities. Clearly states goals and objectives.	Some activities not well related to students' experience.
Usability	Pages are easy to photocopy. Explanations are clear and logical.	May not provide sufficient background information for all activities.

"While the topics covered are diverse, they are not clearly connected to each other."

"A useful, all-around resource that introduces learners to the many complex issues in environmental education."

Environmental Science:
Ecosystems

Written by: MaryJo Diem, Janice Haymes, Lee Hunter & Seth Shulman

Globe Fearon Customer Service Center
4350 Equity Drive
P.O. Box 2649
Columbus, OH 43216-2649

phone: (800) 848-9500
fax: (614) 771-7361
website:
http://www.globefearon.com

Cost: $8.95

SUBJECTS

Science
Social Studies

IN A NUTSHELL

This student textbook addresses fundamental characteristics of ecosystems. The five chapters address definition of ecosystems, changes, interactions and cycles in ecosystems, and the effects of human activities. The material includes text interspersed with laboratory experiments under controlled conditions, field studies involving experiments outdoors or using existing natural structures, and case studies. Puzzles encourage the student to calculate or solve problems without empirical research. Important themes and vocabulary words are clearly distinguished. The text also features frequent questions, discussion ideas, and section reviews to help students test their understanding of the material. Illustrated with graphs, charts, maps, and black and white photographs. Also included are a resource directory of organizations and teaching materials, an index, a glossary, and a brief statement about young people and community action. A separate teacher resource manual is also available.

Grade Level
6 & up

Length
92 pages

Date Published
1995

THE BOTTOM LINE

"This would be an excellent resource for a unit on ecosystems."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Encourages learner to explore and consider different viewpoints.	Sources of information not cited.
Depth	Each chapter builds on previous learning.	Little integration with other subjects.
Emphasis on Skills Building	Skills addressed include writing, discussion, observation and other research skills.	
Action Orientation	Text encourages sense of ownership and challenges students to consider what actions they can take.	
Instructional Soundness	Material connects topic to learner's everyday life. Provides indoor and outdoor activities.	Experiments do not allow for student input or curiosity.
Usability	Labs require simple, inexpensive supplies.	No mention of teacher's guide or supports. Materials copyrighted and cannot be reproduced. No age level indicated.

"Field studies are like recipes. There is not much room to improvise or create situations."
"This could support/enhance classroom development of the concept of ecosystems. It could be a good book for a student to use on an individual study project."

Fish Ways

Intermediate/Senior

Canadian Wildlife
Federation
2740 Queensview Drive
Ottawa, ON K2B 1A2
Canada

phone: (613) 721-2286
fax: (613) 721-2902

Cost: Distributed in training workshop which is free or requires a minimal charge.

SUBJECTS

Economics
Science
Social Studies

IN A NUTSHELL

This is the middle/high school component of a comprehensive curriculum regarding fish and their ecosystems and responsible fisheries management. The thirty-eight lessons are arranged by grade level, and incorporate role play, experiments, problem solving exercises, and direct experience to facilitate student interest and involvement in learning. Topics covered include taxonomy, the ethics of preserving endangered fish species, developing population profiles, and exploring the reasons why people value fishes. Some of the lessons call for use of live or caught fish or require field trips. Each lesson includes objectives, teacher background information, setting, key vocabulary, evaluation suggestions, extension activities, and links to Ontario, Canada curriculum guidelines. The material comes in a three-ring binder, provides student worksheets and materials, and is illustrated with drawings, graphs, maps, and charts. Appendices include a glossary, information on aquaria, and a list of resources. A full-color poster and a set of fish identification cards are included. Curriculum is also available in French.

Grade Level
7-12

Length
346 pages

Date Published
1991

THE BOTTOM LINE

"Social and economic issues are well balanced within the science framework."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Cites reviewers, authors and sources of information. Encourages inquiry.	Some information may be outdated.
Depth	Investigates fish from many different perspectives and disciplines (e.g. physics, history, economics, biology).	Material is specific to Canada and would need to be adapted for use in the United States.
Emphasis on Skills Building	Develops critical thinking, experimentation, and decision-making skills.	
Action Orientation	Develops a sense of personal stake in the issues of fish and fish management.	
Instructional Soundness	Clearly states objectives and related subject areas. Makes use of a variety of teaching styles and settings.	
Usability	Clear, logical format is easy to follow. Provides thorough background information for each lesson. Lists supports and references clearly.	

"Most complete, in-depth study of a subject I have seen."

"The hands-on/lab experiences seem appealing and educational at the same time."

Flight for Survival

Public Media Education
4411 N. Ravenswood Ave.
Chicago, IL 60640-5802

phone: (800) 826-3456
(773) 878-2600
fax: (773) 878-8406

Cost: $14.95 (video)
$14.95 (teacher's guide)

SUBJECTS

Fine Arts
Health
Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

Flight for Survival consists of ten lessons built as an adjunct to a videotaped documentary of efforts to protect the bald eagle. The lessons include topics related to eagles, such as DDT accumulation in the food chain, but also deal with conservation efforts for owls and falcons. Each lesson plan includes objectives, an overview of the lesson, a list of materials, required handouts or worksheets, extension activities, and connections to other lessons. One lesson involves a field trip to the Chicago Academy of Sciences; all other lessons are forty minutes in length. The types of activities included are discussion of environmental dilemmas, calculations, simulation games, and construction of masks. Students are frequently encouraged to consider careers in science and to understand the jobs of wildlife biologists, chemists, and other involved in conservation efforts. The guide includes suggestions for customizing the material to meet individual teacher's needs.

Grade Level
4&up

Length
30 minute video
118 page guide

Date Published
1995

THE BOTTOM LINE

"The inclusion of student art work in the teacher's guide is a nice touch."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Invites inquiry and discussion of different viewpoints.	Behavior shown on film is not always consistent with message.
Depth	Provides overall awareness of issues relating to raptors. Conceptual framework is clear.	Lacks information regarding predator control, hunting, and other issues.
Emphasis on Skills Building	Encourages some critical and creative thinking.	Does not emphasize applying action skills.
Action Orientation	Not Applicable.	
Instructional Soundness	Materials are learner-centered.	Grade level not specified. Little connetion to learner's lives.
Usability	Lessons are well organized and logically sequenced. Although designed for Chicago, Illinois students, most activities can be adapted to other areas.	Video shows surgery on a bird's eye. No index or page numbers are provided.

"The video shows some very unsafe techniques, such as climbing a 75-foot tree with no safety harness or rope."

"The program accomplishes the goals it set for itself."

Forest Fires:
Disaster or Not?

Written by: Beau Fly Jones, Margaret Tinzman & Judie Thelen

Breakthroughs: Strategies for Thinking
Zaner-Bloser, Inc.
P.O. Box 16764
Columbus, OH 43216-6764

phone: (800) 421-3018
(614) 487-2896
fax: (800) 992-6087
website:
http://www.zaner-bloser.com

Cost:
$24.97 for 5 student packages
$59.97 for 15 student packages
$89.97 for 25 student packages
Teacher & student editions, student journal, black line masters are available for individual sale.

SUBJECTS

Language Arts
Science

IN A NUTSHELL

This packet consists of a student book, a teacher's guide (which is an annotated and expanded version of the student text), a collection of extension activities, and a set of blackline masters. The core materials address forest fires and discuss their positive and negative impacts upon the forest. The curriculum begins with students identifying what they already know about forest fires. Three lessons address the benefits and dangers of forest fires; a fourth lesson addresses applications of information learned. Supportive didactic activities include a decision-making frame, a thinking strategies concept map, and a glossary. The teacher's guide includes additional resources, preparation tips, suggestions for bridging between lessons, and ideas for extending the activities. "Newsworthy Notes" also provides additional information. The science extension brochure includes instructions and worksheets for an experiment. The material is illustrated with color photographs and drawings, and provides student worksheets.

Grade Level
4-6

Length
25 pages

Date Published
1992

THE BOTTOM LINE

"Would be a good component of a tree or forestry unit."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Presents different perspectives on forest fires. Looks at impact on people, plants and animals.	Shows only white male firefighters. Does not address role of fire in Native cultures.
Depth	Provides historical perspective on forest fires.	
Emphasis on Skills Building	Develops critical thinking and writing skills such as predicting and justifying decision.	
Action Orientation	Not Applicable.	
Instructional Soundness	Lists concepts, thinking processes, and thinking strategies. States learner objectives. Makes topic relevant to learner (increased costs, for example).	
Usability	Easy to use. Teacher's guide offers supportive information and ideas.	Worksheets are copyrighted and cannot be reproduced.

"Scientific concepts were strong but the book did not stick to the subject."

"The primary purpose is teaching students how to apply different thinking strategies and processes to issues."

Global Energy Perspective

An Interdisciplinary Energy Module for Middle Level Education

Written by: Dr. Jody Stone & Dr. Tim Cooney

Price Laboratory School
University of Northern Iowa
Cedar Falls, IA 50613

phone: (319) 273-6466
fax: (319) 273-6457
e-mail: jody.stone@uni.edu
website: nitro9.earth.uni.edu/EECP/eecp.html

Cost: $8.00 or materials can be downloaded from the website. No charge to Iowa educators.

SUBJECTS

Economics
Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This is Module 5 in a five part series on energy for middle school students. It is divided into four sections, containing activities related to energy with a focus on one of four subject areas (science, mathematics, language arts and social studies). The theme of global warming is found throughout the activities and lessons. Activities include conducting experiments about the qualities of gases, developing models to help understand greenhouse gases, displaying information graphically, debating the differing perspectives on energy, developing a game, and participating in a role-play representing the interests of various countries. Each activity includes separate teacher's notes and student pages. Objectives, overview, materials needed, background information, and teaching strategies are listed for each. The four appendices (one for each section and subject) include overhead masters, references, student worksheets, instructions for debates and games, flags of countries featured in the role play, and other supplies. Charts, tables and drawings are included.

Grade Level
middle school

Length
108 pages

Date Published
1995

THE BOTTOM LINE

"I would like to see a workshop to introduce this material to teachers. There is so much here that it could be overwhelming."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Presents both sides of global warming issue. Encourages questioning and debating.	Activities seem to assume that students will find a need to reduce greenhouse gases. Information sources not cited.
Depth	Module is interdisciplinary. Looks at many different aspects of global warming.	Fails to mention historical context for energy consumption patterns or to address different energy sources.
Emphasis on Skills Building	Identifies process skills in teacher's notes. Encourages critical thinking and debating skills.	Does not encourage students to do own research, very teacher guided.
Action Orientation	Home/Community Connections sections suggest actions students can take. Encourages students to look at their own behavior.	Gives limited alternatives on actions and does not encourage further inquiry.
Instructional Soundness	Clearly states objectives. Includes simple hands-on experiments.	
Usability	Provides clear instructions and ample background information. It is well organized and user friendly.	

"Provides no links to causes of greenhouse effect, such as consumptive life-styles and nonrenewable sources of energy."

"This is a good attempt to link different disciplines together."

GrowLab:
Activities for Growing Minds

Written by: Eve Pranis & Joy Cohen

National Gardening Association
180 Flynn Avenue
Burlington, VT 05401

phone: (800) 538-7476
(802) 863-1308
fax: (802) 863-5962
e-mail: sales@garden.org
website:
http://www.garden.org

Cost: $24.95

SUBJECTS

Language Arts
Science
Social Studies

IN A NUTSHELL

This book contains forty-five indoor gardening and plant-related activities. Each of the four sections highlights a different concept in plant science: basic needs and structure, plant reproduction, diversity and adaptations, and the role of plants in ecosystems. The lesson plans are structured in four parts: laying the groundwork, exploration, making connections, and branching out. Each activity is provided with an overview and is labeled for the targeted age group, time requirements for the various sections of the lessons, materials required (including handouts, worksheets or other papers), and advance preparation. Suggestions for instructors are found in the 20-page introduction, in the margins, and in frequent background sections. Activities include experiments with growing plants from seeds or roots, testing the effects of light on plants, and exploring photosynthesis by testing for sugar and starch. The book includes numerous appendices, including form masters, resource lists, an index, and suggestions for extension activities.

Grade Level
K-8

Length
307 pages

Date Published
1995

THE BOTTOM LINE

"This is an outstanding resource book containing many straightforward, factual discovery lessons."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Extensively referenced throughout. Fact-based, seems fair and accurate.	
Depth	Strong emphasis on awareness. Makes connections to children's literature and to social/economic impacts.	
Emphasis on Skills Building	Develops observation, questioning, reasoning, problem solving and technical skills.	Contains only minimal suggestions for action skills.
Action Orientation	Not Applicable.	
Instructional Soundness	Activities require student participation and group work. Provides interdisciplinary opportunities and connections to learners' lives.	Objectives are clear, but overly simplistic.
Usability	Materials are clear, long-lived, easy to use, provide numerous choices for the instructor.	Binding makes it difficult to copy pages.

"While technically correct, the information is very basic. Use it as a source of experiments adaptable to any grade level."

"Highlights learning to help plants grow, and to improve school and community."

Hands-On Plastics:

A Scientific Investigation Kit

IN A NUTSHELL

This kit, which comes in a carrying case made of recycled plastic, includes a text as well as recycled pellets, products in various stages of the recycling process, and a preform bottle for use in the unit's chemical experiments. The text is divided into four chapters and contains a variety of exercises, laboratory experiments and extension activities. The emphasis of the laboratory experiments is on enabling students to understand various types of plastics, to identify and recognize their characteristics, and to become familiar with the chemistry and processes behind their production and recycling. Activities for younger learners include developing an awareness of the prevalence of plastics in their world. The text includes background information for teachers and students, slides, worksheets, diagrams of chemical equations, a color brochure on developing a school recycling program, and a directory of state recycling offices. A supplemental videotape is available for rental and copying but is not included in the kit itself.

Grade Level
middle school

Length
50 pages + kit

Date Published
1995

Written by: American Plastics Council & National Middle Level Science Teachers Association

American Plastics Council
1801 K. Street, NW
Suite 701-L
Washington, DC 20006

phone: (800) 2-HELP-90
fax: (202) 296-7119
website: http://www.plasticsresource.com

Cost: $10.00

SUBJECTS

Science

THE BOTTOM LINE

"Subtly pro-plastic because you study plastic. However, it doesn't say that plastics are great; it just explains and describes them."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Very factual. Presents informative background on the history and significance of polymers.	Focuses on benefits of recycling but does not address pitfalls.
Depth	Thorough explanation of chemistry of plastics.	Fails to address economic impact (e.g. jobs), energy costs, or pollution risks.
Emphasis on Skills Building	Addresses critical thinking, problem solving and scientific method.	
Action Orientation	Provides instructions for setting up a recycling program at school. Directly states that individuals can make a difference.	Does not address recycling in other settings, such as home. Fails to mention reducing or reusing as alternatives.
Instructional Soundness	Information is connected to everyday life. Reflects different learning styles.	Some activities are potentially dangerous and do not include safety instructions.
Usability	Materials are well organized and labeled and are easy to use. Provides list of sources for further information.	Supplies must be replaced when exhausted.

"Limited in scope and therefore should be used with other materiels."

"Children are not 'hit over the head' with why they should recycle."

A Home for Pearl

Written by: Ellen Lambeth & Miriam Olivia Westervelt

Phillips Educational Programs
c/o Karol Media
350 N. Pennsylvania Ave.
P.O. Box 7600
Wilkes-Barre, PA
18773-7600

phone: (800) 524-1013

Cost: $10.00 for video & guide
Free to teachers — 1 copy per school

SUBJECTS

Health
Mathematics
Science
Social Studies

IN A NUTSHELL

This program consists of a four-part videotape accompanied by an instructional guide with related exercises and information. The video episodes follow a group of school children as they learn about the differences between wild and domesticated animals, how injured wild animals are cared for and when they can be returned to the wild, animal habitats, what kinds of wild animals live in or close to cities, the roles of predators and prey, and how people can affect wildlife habitats. The tape ends with an appropriate habitat being located for Pearl, a bald eagle recovering from injuries at a wildlife center. The segment uses child actors and features important vocabulary words and concepts printed on the screen as they are introduced. The instructional guide contains an overview, discussion questions, a coloring page, vocabulary, extension activities for each video segment, and two related activities from *Project WILD*. An appendix provides evaluation exercises and addresses for local *Project WILD* coordinators and offices of the U.S. Fish and Wildlife Service.

Grade Level
K-6

Length
70 minute video
44 page guide

Date Published
1988

THE BOTTOM LINE

"Students would feel satisfaction knowing the 'right' thing to do for urban wildlife, and as a result would feel that they can have an impact on the environment."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Material shows diverse urban/ suburban children.	Primary sources of information are not documented. Could include greater selection of differing views.
Depth	Develops awareness well. Presents concepts in context and in real-life situations.	Refers to natural (vs. human-caused) impacts on habitats, but does not elaborate. Could do more to address social and economic contexts.
Emphasis on Skills Building	Activities allow for creative thinking, data analysis and problem solving.	Some activities appear to prompt students to give the "right" answer.
Action Orientation	Instills sense of personal responsibility by demonstrating concrete actions that students can take.	
Instructional Soundness	Makes connection to learners' everyday lives. Addresses many different learning styles.	
Usability	Substantiates claims. Materials are long-lived, reusable, easy to use and adaptable to different situations and students.	Program is not grade specific.

"Dispels a lot of myths about urban wildlife."
"Gently guides us to the realization that all living things need a home and that we all share the same space."

Hunters of the Sky

An Activity Guide on Birds of Prey

Educational Resources
Science Museum of Minnesota
30 E. Tenth Street
St. Paul, MN 55101

phone:
(800) 221-9444 ext. 4543
fax: (612) 221-4526

Cost: $7.95

SUBJECTS

Economics
Fine Arts
Language Arts
Science
Social Studies

IN A NUTSHELL

These eleven activities are designed both to teach about raptors and to use raptors as a starting point for the investigation of environmental issues. The activities introduce students to the basic identification of raptors and their adaptations. Students explore owl pellets, create different models of paper airplanes to simulate different wing types, examine raptor feathers, and conduct exercises comparing monocular and binocular vision. The last two activities involve the students in thinking about raptor issues. One simulates a town meeting in which the protection of bald eagle habitat is discussed. The other uses a set of "dilemma cards" so that students can develop appropriate solutions to common management issues. Each activity identifies thinking skills used, needed materials, and extension ideas. Student handouts, teacher background information, an annotated bibliography, and a list of supply sources are included.

Grade Level
3-12

Length
44 pages

Date Published
1994

THE BOTTOM LINE

"Materials offer a variety of activities which should excite youth. Bird of prey activities are usually a hit with students."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Different points of view are given. Balanced presentation.	Unclear who reviewed material.
Depth	Strong on developing awareness of raptor issues. Includes social, economic and historic contexts.	Focus is largely on how raptors impact their local ecosystem.
Emphasis on Skills Building	Challenges readers to hypothesize about outcomes of certain actions. Uses observing, comparing and contrasting skills.	
Action Orientation	Promotes civic responsibility and encourages students to reach consensus with those of differing views.	Little information on raptor conservation projects.
Instructional Soundness	Uses mixture of student-centered and teacher-directed activities. Addresses different learning styles.	Most activities are classroom-based. Does not list age level for activities.
Usability	Lessons are clear with simple instructions. Provides telephone numbers and addresses for assistance or support.	

"Differing points of view appear as 'dilemmas' or 'concerns' to be researched, which some may see as a hidden protectionist agenda."

"Could use more information on economic value of raptor habitat for non-raptor uses."

Investigating Science Through Bears

Written by: Karlene Ray Smith & Anne Hudson Bush

Libraries Unlimited Inc.
Teacher Ideas Press
P.O. Box 6633
Englewood, CO 80155-6633

phone: (800) 237-6124
(303) 770-1220
fax: (303) 220-8843
e-mail: lu-books@lu.com
website: http://www.lu.com

Cost: $23.50

SUBJECTS

Fine Arts
Language Arts
Science
Social Studies

IN A NUTSHELL

This book consists of information and lesson plans involving four widely-known types of bears: the polar, panda, brown, and black bears. Each is covered in a separate chapter consisting of an introduction, two to three lesson plans, and information on the bear's physical characteristics, habitat, life cycle, and interactions with humans. Lesson plans include projects such as building models of bear habitats, designing posters about endangered bears, and conducting simple experiments regarding water pollution. A subsequent chapter gives less detailed information on four other bear species. A section entitled "Bear Parties in the Classroom" gives suggestions for using teddy bears for educational purposes. The text also includes a chapter on bears in literature, an index, recipes for making modeling clay, educational resources for teachers, annotated bibliographies, and masters of student learning sheets.

Grade Level
3-5
Length
212 pages
Date Published
1994

THE BOTTOM LINE

"The activities do a good job with language concepts — reading, mapping, exchanging ideas and insights — and are entertaining and fun."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Provides thorough background information on various bear species.	Reviewers and sources of information are not listed.
Depth	Provides general awareness about bears and their situation. Introduces some general science concepts.	
Emphasis on Skills Building	Involves students in researching and analyzing. Contains many group activities.	
Action Orientation	Not Applicable.	
Instructional Soundness	Lists goals and objectives. Material is interdisciplinary and uses a variety of instructional techniques.	Some activities may be more appropriate for younger grades.
Usability	Supplies needed are easily obtained. Information is adaptable and long-lived.	

"Too much of an emphasis on facts, not on what the facts mean."

"I could see it being useful to a scout leader or other nonformal educator, or to a teacher willing to do the work to integrate it into the curriculum."

Keepers of the Animals

Native American Stories and Wildlife Activities for Children

Written by: Michael J. Caduto
& Joseph Bruchac

Fulcrum Publishers
350 Indiana Street
Suite 350
Golden, CO 80401

phone: (800) 992-2908
fax: (800) 726-7112
e-mail: fulcrum@concentric.net

Cost: $19.95 softcover
$9.95 for Teacher's Guide

SUBJECTS

Fine Arts
Language Arts
Science
Social Studies

IN A NUTSHELL

Keepers of the Animals is a compilation of twenty-four stories from a variety of Native American traditions. Each story is annotated with background information, a discussion of the story and the cultural background from which it stems, information about the animals highlighted in the story, discussion questions to be posed to students, and activities designed to give students a clearer understanding of the natural history facts or processes described in the story. Individual activities list goals, age ranges, and materials needed. The text is illustrated with drawings, photographs, diagrams, and masters for student pages and assignments. Activities are coded to indicate preferred settings, and which of four principle subject areas (sensory awareness, understanding, caring for animals, and caring for people) is involved. Activities and subjects are indexed, and a pronunciation guide to Native American words is included. The *Teacher's Guide* includes four essays on education and native cultures and provides lists of resources and additional readings for each chapter.

Grade Level
K-adult

Length
266 pages

Date Published
1991

THE BOTTOM LINE

"There is so much good and interesting information that at first it is overwhelming."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Identifies reviewers and states their professions and affiliations. Presents differing viewpoints and encourages student inquiry. Perspective of authors clearly stated.	
Depth	Addresses broad concepts by using concrete examples. Focuses on developing an appreciation of the complexity of connections between life forms.	Does little to address economic aspects of issues.
Emphasis on Skills Building	Addresses critical thinking skills such as observation, analysis, and problem solving.	It is sometimes difficult to identify the skills involved in each activity.
Action Orientation	Strong on developing sense of personal responsibility. Provides opportunities for students to become involved in action projects.	
Instructional Soundness	Activities are learner-centered and interdisciplinary. Goals and concepts are clearly stated. Contains both indoor and outdoor activities. Attentive to different learning styles.	
Usability	Well organized with helpful index and table of contents.	Materials for some activities may be difficult to obtain. Time requirements are not listed.

"Allows students to explore values and ethics within the context of nature while providing a good means of teaching scientific concepts."

"Creative thinking, including the use of metaphors, is modeled and encouraged."

Ladybugs
Teacher's Guide

Written by: Jean C. Echols

GEMS
Lawrence Hall of Science
University of California
Berkeley, CA 94720-5200

phone: (510) 642-7771
fax: (510) 643-0309
website:
http://www.lhs.berkeley.edu

Cost: $10.50

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science

IN A NUTSHELL

This book is designed to provide young students with an introduction to ladybugs. It contains five activities of two to four sessions in length, addressing ladybug life cycle, body structure, defense behavior, eating habits, and benefits to agriculture. Activities include drama, role playing the life of a ladybug, observation, developing insect costumes and models, and discussion.

Grade Level
Pre K - 1

Length
80 pages

Date Published
1993

Many of the activities include keeping and caring for live ladybugs for observation and appreciation. The final activity includes having the students thank the ladybugs for protecting crops. Opportunities are given for using the activities to teach science concepts such as symmetry and metamorphosis. The book includes full-size reproducible masters and patterns, instructions for preparing and leading the activity, lists of resource books, materials, literary connections, overview, background material, a glossary, and summary outlines of lessons. Illustrations include photographs, drawings, and diagrams.

THE BOTTOM LINE

"This is a cute activity guide for young students; it has a lot of 'doing' components."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Photographs reflect ethnically and racially diverse students. Reviewed nationally by teachers.	Information sources not cited. Favors natural pest management over pesticide use.
Depth	Introduces themes and concepts, not just facts about ladybugs. Presents connection to local community.	
Emphasis on Skills Building	Uses comparing, listening, cooperating with others, and creative expression skills.	
Action Orientation	Not Applicable.	
Instructional Soundness	Lessons incorporate a number of teaching strategies and diverse sensory involvement.	Does not list specific goals and objects for lessons.
Usability	Provides clear instructions. Lists extension opportunities. Materials are clear and easily reproducible.	Time requirements not listed. Table of contents not very detailed.

"Good lessons and activities, but teachers may need to take up the slack on a few items."

"At first it seemed a bit funny to have a whole unit on ladybugs, but the materials do manage to put the ladybug into the larger context of the environment."

Mapping Fish Habitats

Teacher's Guide

Written by: Katharine Barrett & Cary I. Sneider

GEMS
Lawrence Hall of Science
University of California
Berkeley, CA 94720-5200

phone: (510) 642-7771
fax: (510) 643-0309
website:
http://www.lhs.berkeley.edu

Cost: $10.50

SUBJECTS

Mathematics
Science

IN A NUTSHELL

Mapping Fish Habitats consists of four sequential lessons which teach students about the movements of fish and gives them practice in identifying, tracking, and interpreting fish movements. The lessons begin by explaining the basic setup of a classroom aquarium and how to identify different fishes. Students are then introduced to the fish mapping system. They are given opportunities to practice the fish mapping techniques used by biologists and to conduct experiments regarding fish movements. Each activity ranges from thirty to forty-five minutes in length. The study guide provides complete instructions for each lesson and for follow-up exercises, along with masters for student handouts and study pages. An appendix gives additional information about aquaria, lists additional readings, and suggests extension activities. The guide is illustrated with black and white photographs, drawings, charts, and samples of maps.

Grade Level
6-10

Length
52 pages

Date Published
1992

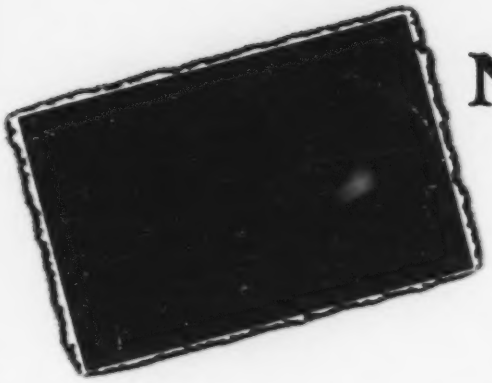
THE BOTTOM LINE

"This is a useful science guide, especially if a teacher cannot take students off-campus for learning."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Reviewers of materials cited. Reviewed nationally by teachers. Primary information is from reputable sources.	No attention to diverse student populations.
Depth	Uses classroom exercise to relate ecological concepts. Emphasis is on understanding fish behavior.	Guide has a very narrow focus. Some important concepts are not well defined.
Emphasis on Skills Building	Lessons involve observation, classification, and developing and testing hypotheses.	
Action Orientation	Not Applicable.	
Instructional Soundness	Clearly states goals and learner outcomes.	Does not relate material to learners' lives. Does not connect to other disciplines or subject areas.
Usability	Instructions are clear. Information should be long-lived.	

"An interesting series of activities."
"I would like to see the lessons linked up with some environmental problems that involve fish habitats as well as their behavior."



Nature Close-Up: Earthworms

Written by: Elaine Pascoe

Blackbirch Press, Inc.
P.O Box 3573
260 Amity Road
Woodbridge, CT 06525

phone: (800) 831-9183
fax: (230) 389-1596
e-mail: staff@blackbirch.com
website:
http://www.blackbirch.com

Cost: $16.95

SUBJECTS

Science

IN A NUTSHELL

This book about worms is for younger readers. The first chapter addresses basic information about earthworms, including how they eat, dig and reproduce. Chapter two covers caring for and displaying captive earthworms and includes a discussion of their use in composting. The final chapter contains activities for exploring earthworm biology and behavior. Readers are provided with lists of required materials, instructions, and help in developing and assessing hypotheses. Activities include determining what worms eat and how they respond to light, searching for evidence of earthworms around the home, and testing the effects of earthworms on plants. The book is illustrated with full-color photographs and includes a glossary, index, suggestions for further reading, and lists of suppliers of earthworms and related materials.

Grade Level
3-5

Length
48 pages

Date Published
1997

THE BOTTOM LINE

"This book might be overlooked by older students because it looks like a 'baby' book, when indeed it is very informative."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information appears accurate. Encourages reader to learn about worms independently.	Little discussion of worms' value in agriculture as well as urban settings.
Depth	Content is logical and provides thorough treatment of earthworm biology.	Facts not well integrated into an ecological context.
Emphasis on Skills Building	Teaches observation, data gathering, and data interpretation skills.	
Action Orientation	Not Applicable.	
Instructional Soundness	Very learner-centered; encourages learner to conduct own experiments, make inferences, and share information with others.	Topic not integrated with other subject areas. Goals not stated.
Usability	Format is inviting, easy to use. Materials are accessible to most students. Can be adapted to most classroom situations.	

"Introduces and uses scientific method. A very user friendly book for young scientists and first-timers."

"Strong on biological characteristics but weak on ecological concepts."

Nature Puzzlers

IN A NUTSHELL

This is a collection of fifty puzzling situations from the world of nature, designed to help teachers arouse their students' interest and to provoke student inquiry. The puzzles range from experiments (such as determining whether humans can sense colors using body parts other than the eyes) to brainstorming and speculation (such as how some birds might know the quantity of the following year's food source). Each puzzler contains additional activities related to the issue discussed, a teacher's key, identifying relevant cognitive skills, concepts, and difficulty level, and sources of reference information. Many puzzlers also feature alternate hypotheses, and possible counter arguments. The puzzlers are arranged in order of ascending difficulty. The book provides suggestions for using the puzzlers in teaching situations and includes student worksheets, references, and indices of skills, concepts, and organisms.

Grade Level
6-12
Length
152 pages
Date Published
1989

Written by: Lawrence E. Hillman

Libraries Unlimited Inc.
Teacher Ideas Press
P.O. Box 6633
Englewood, CO 80155-6633

phone: (800) 237-6124
(303) 770-1220
fax: (303) 220-8843
e-mail: lu-books@lu.com
website: http://www.lu.com

Cost: $19.50

SUBJECTS

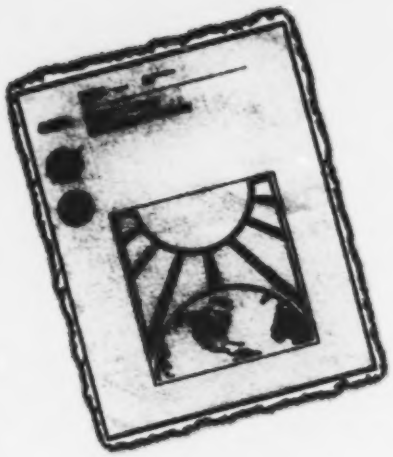
Health
Language Arts
Science

THE BOTTOM LINE "Encourages students and teachers to use the library to enhance research and cognitive skill development."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Material is based on inquiry. Students discover information themselves and determine if that information is balanced and accurate.	
Depth	Promotes awareness of the natural environment. Depth of concept development dependent on students' research.	Seldom includes social or economical aspects. Depth of concept development dependent on students' research.
Emphasis on Skills Building	Strong focus on observation, research, and creative thinking skills. Includes a skills index.	
Action Orientation	Not Applicable.	
Instructional Soundness	Requires student involvement in the solving of puzzles. Varying difficulty levels of puzzles can be matched to student abilities.	Mainly set up as thinking, research, discussion format.
Usability	Material is clear, logical, and easy to use.	

"I get the sense that once a puzzler is solved, the inquiry stops. There needs to be guidance to the next stage."
"Can be used to introduce new concepts or as a springboard for discussion."



Ozone Layer
Educator's Guide

United States
Environmental Protection Agency
Office of Air and Radiation

National Center for
Environmental Publications &
Information
P.O. Box 42419
Cincinnati, OH 45452
Reference # 6205J

phone: (800) 490-9198
website: http://www.epa.gov

Cost: No charge

SUBJECTS

Health
Fine Arts
Language Arts
Mathematics
Science

IN A NUTSHELL

This collection of information on the depletion of the ozone layer is designed to give educators scientific background on the issue as well as an assortment of activities to help students understand the problem and its significance. The guide consists of several reprinted scientific articles about the ozone layer and the dangers associated with ozone depletion, eight student investigations, a poster developed by NASA featuring additionalclassroom activities, supporting documents, and a list of educator resources. The investigations and lesson plans address the nature and structure of gases, model construction, reading scientific data and literature, and conducting experiments about the atmosphere. As the materials and experiments are collected from different sources, their complexity and organization vary. Lessons are targeted to young students as well as older and more sophisticated audiences.

Grade Level
H.S.-Adult

Length
82 pages

Date Published
1995

THE BOTTOM LINE

"Provides extensive background, but not comprehensive on all issues pertaining to ozone depletion."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Material is research-based and strong on scientific data.	Does not lend itself to inquiry.
Depth	Provides a comprehensive analysis of issue, addressing personal, local, and global ramifications.	
Emphasis on Skills Building	Makes use of critical thinking and reading skills. Applies skills to a particular issue.	
Action Orientation	Not Applicable.	
Instructional Soundness	Makes use of a variety of instructional methods. Connects to learners' everyday lives.	Limited use of experiential learning approaches. Lends itself to individual instruction.
Usability	Poster is user-friendly. Provides an abundance of background information.	Most useful to those with a strong science background. Inconsistency of material format can be a drawback.

"A mix of resources, not packaged to appeal to the typical teacher unless knowledgeable about the scientific and technical content."
"Vitally important information."

Protected Areas:

An Environmental Education Guide to Protecting Natural Areas

Written by: Susan Staniforth, Faye Mogensen, Diane Simpson, & Julie Kimmel

Project WILD-Habitat
Conservation Trust Fund
P.O. Box 9354
Sta. Provencial
Government
Victoria, BC V8W 9M1

phone: (800) 663-7867
(250) 356-7111
fax: (250) 952-6684
e-mail: wild@pop.gov.bc.ca

Cost: $20.00 Canadian
(workshop is also available)

SUBJECTS

Language Arts
Science
Social Studies

IN A NUTSHELL

This curriculum is specifically designed to help students explore the concepts, values and practices associated with protected areas, with special attention given to the reasons that people select certain areas for protection. The nineteen activities are divided into four general topic areas dealing with protection. The last of these is a case study which allows students to participate in a structured role play involving decision making. The text provides three options for using the activities, depending upon the desired length of the unit. The fifth section includes suggestions for action projects. Each activity includes key concepts, materials list, time required, journaling suggestions, background information, possible extensions, and correlation to other *Project WILD* activities (if applicable). Provides masters for information sheets and maps, a glossary, ideas for action projects, additional resources, and references. The material is illustrated with maps, drawings, and charts.

Grade Level
5-7

Length
138 pages

Date Published
1996

THE BOTTOM LINE

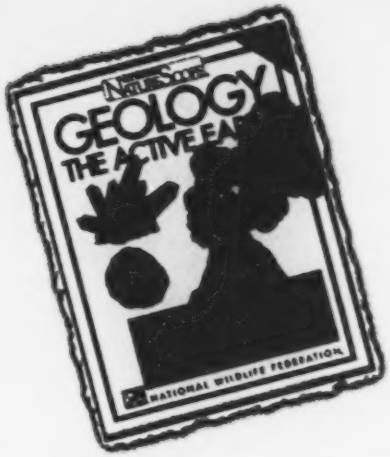
"Provides opportunities for students to explore their individual relationship to the environment."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Encourages students to explore multiple perspectives. Clearly references information.	Does not emphasize industry perspective. Operates under the assumption that protection is desirable.
Depth	States concepts to be learned. Addresses local, regional, continental and global scales. Allows for exploration of learners' world.	
Emphasis on Skills Building	Employs many higher level thinking skills. Students operate both in groups and individually. Allows practice in developing cost/benefit analysis.	
Action Orientation	Provides strategies for citizen action.	
Instructional Soundness	Activities are interdisciplinary and constructivist. Spells out goals and objectives clearly.	
Usability	Provides phone numbers for use in updating information. Clearly states such items as grade level, time required, learner outcomes, and needed equipment.	

"A useful multidisciplinary guide with a strong focus on habitat protection."

"The emphasis on skills building is one of the unique strengths of this program."



Ranger Rick's NatureScope — Geology: The Active Earth

Second Edition

Edited by: Judy Braus
National Wildlife Federation

McGraw-Hill
11 West 19th Street
New York, NY 10011-4285

phone: (800) 722-4726
website:
http://www.pbg.mcgraw-hill.com

Cost: $12.95

SUBJECTS

Fine Arts
Mathematics
Science

IN A NUTSHELL

This collection of activities focuses on the structure of the earth, how rocks and minerals are formed, and how landforms are created and worn down by natural events such as plate tectonics, vulcanism and erosion. The last two sections of the book contain activities dealing with the creation and understanding of fossil fuels. Students are engaged in such activities as making picture cubes of mountains, building models showing the elevations in contour maps, growing crystals, experimenting with erosion on different surface types, and conducting mineral scavenger hunts. Objectives, age ranges, materials lists and related subjects are listed for each lesson, as well as answers to questions and explanations of experiments for teachers. Fourteen student worksheets and handouts are included. The text is illustrated with drawings, maps, and charts, and provides a bibliography.

Grade Level
K-8

Length
96 pages

Date Published
1997

THE BOTTOM LINE

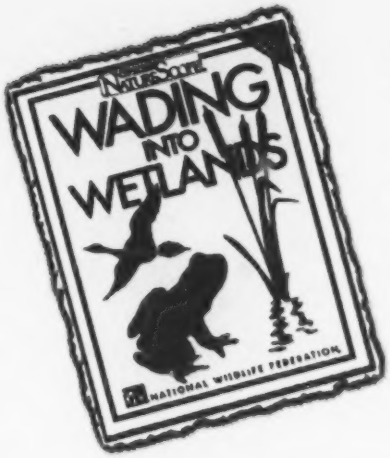
"This is a delightful combination of hard science and 'fun' facts."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information appears factual. Bibliography is provided.	
Depth	Covers both short- and long-term developments.	
Emphasis on Skills Building	Includes critical thinking, identification, organization and observation skills.	Weak on action skills and on judging validity of data.
Action Orientation	Not Applicable.	
Instructional Soundness	Material is learner-centered, and makes use of a variety of learning techniques. Contains a mixture of indoor and outdoor activities. Clearly states objectives.	
Usability	Material is clear, easy to use, and adaptable to a variety of developmental levels. Information is long-lived.	

"This is a well thought-out packet with a logical flow of activities."

"The materials offer many opportunites for inquiry and discuss historic and global geological events."



Ranger Rick's NatureScope — Wading into Wetlands

Second Edition

Edited by: Judy Braus
National Wildlife Federation

McGraw-Hill
11 West 19th Street
New York, NY 10011-4285

phone: (800) 722-4726
website:
http://www.pbg.mcgraw-hill.com

Cost: $12.95

SUBJECTS

Fine Arts
Health
Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This booklet contains twenty activities and craft projects for students that explore wetland habitats and types, the interactions of people with wetlands, and the value of wetlands to human life. Activities includes identifying and defining wetlands, creating models of how wetlands receive and store water, developing models of mangrove trees, and identifying differences between freshwater and saltwater wetlands. Other activities include making recipes from wetland plants, and discussing consequences of wetland loss on other ecosystems and regions. The materials include both classroom activities and suggestions for field trips to local wetlands. Objectives, age ranges, materials lists and related subjects are listed for each lesson, as well as answers to questions and explanations of experiments for teachers. Fourteen student worksheets, handouts, and a bibliography are included. The text is illustrated with photographs, drawings, maps, and charts.

Grade Level
K-8

Length
90 pages

Date Published
1997

THE BOTTOM LINE

"These are some really good activities. The teacher pages are strong on information."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Presents different viewpoints of one wetland case study. Identifies scientific consultants.	
Depth	Develops concepts in context. Builds connections between different disciplines.	
Emphasis on Skills Building	Includes classification, identification, and critical thinking skills.	
Action Orientation	Discusses effects of wetlands on human life. Case study demonstrates result of citizen action.	
Instructional Soundness	Addresses varied learning styles and age groups. Uses expanded learning environment. Lessons are interdisciplinary.	Not enough information on how to approach children with different views of wetlands.
Usability	Provides background material for each activity. Information is long-lived. Clearly states objectives.	

"This would be weak as a total unit, but it would be useful to add to an existing unit."

"Builds awareness of an area many students have never seen. Builds connections between wetlands and human activities."

Rocks, Sand and Soil

Written by: Joan Westley

Windows on Beginning Science Series
Creative Publications
5623 W. 115th Street
Alsip, IL 60482

phone: (800) 624-0822
fax: (800) 624-0821
e-mail: www.mathland.com

Cost: $13.75

SUBJECTS

Fine Arts
Science

IN A NUTSHELL

This is part of a larger series designed to expose younger children to science and scientific processes. The twenty-eight lessons in this book involve simple activities with rocks and soils. The activities are structured to develop skills and to teach students about the natural world. Among the activities are building sand castles, checking the magnetic properties of soil, making timers out of sand, describing and making of rocks out of dough, making plaster casts of fossils, and comparing water drainage in different soils. Each activity lists the skills developed and materials needed, and provides information for setting up. The instructions include questions to ask during and after the activities, ways of recording or charting findings, and suggestions for stretching students' thinking by applying the skills to related situations.

Grade Level
pre K- 2

Length
60 pages

Date Published
1988

THE BOTTOM LINE

"Allows the students to explore science naturally, while the instructor provides structure to the inquiry."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Encourages student inquiry.	Does not cite reviewers or references.
Depth	Develops awareness and concepts appropriately for grade level.	
Emphasis on Skills Building	Strong on observation and classification skills. Encourages creative thinking and problem-solving. Involves both individual and group work.	
Action Orientation	Not Applicable.	
Instructional Soundness	Activities are learner-centered and promote exploration. Lessons become more complex and build on previous activities.	
Usability	Instructions are clear, logical and easy to follow. Requires simple materials.	Material cannot be copied for classroom use. Some teachers may need assistance in locating different kinds of soil and rock samples.

"The activities are good, but the book is clearly meant to be used as a supplement to other science materials."

"Students are encouraged to participate, explore, and enjoy."

Science and Social Issues

Written by: David E. Newton

J. Weston Walsh, Publisher
321 Valley Street
P.O. Box 658
Portland, ME 04104

phone: (800) 341-6094
(207) 772-2846
fax: (207) 722-3105
website:
http://www.walsh.com

Cost: $13.95

SUBJECTS

Economics
Health
Science
Social Studies

IN A NUTSHELL

This student textbook looks at the importance of science and technology in addressing a number of social issues. The social issues discussed in this book include euthanasia, hunger, pollution, genetic engineering, abortion, cigarette smoking, endangered species, energy resources, and human population. Each of the twelve chapters contains a brief introduction to the social issue in question, followed by case studies that demonstrate the influence of science on how the issue might be addressed. Each case study concludes with a questions for the students to ponder and a list of background readings. An assignment called "The Buck Stops Here," in which the student is called on to make a decision or develop a plan for addressing the issue, is also included. The text is illustrated with black and white photographs, diagrams and drawings. It includes an index and an appendix detailing the two sides of the evolution/ creationism debate.

Grade Level
9-12

Length
236 pages

Date Published
1992

THE BOTTOM LINE

"The case studies lend themselves to higher level critical and creative thinking and moral/ethical development."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Incorporates different viewpoints and encourages discussion of issues.	Text could go out of date quickly due to changing laws and discoveries. Some errors in dates were noted.
Depth	Builds awareness of different issues.	No conceptual framework or outline. Devotes only one chapter to each complex issue.
Emphasis on Skills Building	Engages higher level thinking skills and research abilities. Uses case studies to analyze issues.	
Action Orientation	Helps students see relevance of issues to their own lives and develops a sense of personal efficacy.	Focus is not on taking action.
Instructional Soundness	Material is interdisciplinary, drawing on history, literature and other subjects.	Material is text-heavy and primarily reading based.
Usability		Teacher guide is only one page. Background readings not provided in text.

"Includes thought-provoking readings, case studies and discussion questions."

"Opportunities to engage in mature discussion and belief formulation permeate this guide."

Science, Technology, & Society: Populations

Globe Fearon Customer
Service Center
4350 Equity Drive
P.O. Box 2649
Columbus, OH 43216-2649

phone: (800) 848-9500
fax: (614) 771-7361
website:
http://www.globefearon.com

Cost: $11.95

SUBJECTS

Health
Science
Social Studies

IN A NUTSHELL

This textbook addresses issues pertaining to both human and animal populations. The book begins with an overview of STS (Science/Technology/Society) issues, discusses research and interviewing skills, and prepares students for collecting, analyzing and understanding data. The remaining chapters address extinction of living things, human population growth, human health, world food resources. Among the topics addressed are immigration, the aging of the U.S. population, the development of organic farming and the irradiation of food, animal testing for medicine, and development of energy sources. Students are encouraged to consider specific questions as they read articles and essays on the information. The text is illustrated with black and white photographs, maps, and cartoons, and includes resource lists, suggestions for developing skills, a glossary, and an index.

Grade Level
6-7
Length
278 pages
Date Published
1993

THE BOTTOM LINE

"The text seems strong on encouraging critical thinking and allowing students to weigh pros and cons of every issue."

83

What the REVIEWERS Said!

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information appears factual. Clearly lists reviewers and contributors. Reviewers are of broad geographic distribution. Encourages student inquiry and reflection.	Presented only one article on each topic. Diverse viewpoints not always presented.
Depth	Builds awareness of interconnectedness of science, technology, and society.	Discussion focuses more on issues than concepts.
Emphasis on Skills Building	Develops critical thinking, debating, problem-solving, and persuasive reasoning skills. Teaches use of cost-benefit analysis and application of skills to issues.	
Action Orientation	Each chapter has a section on getting involved.	
Instructional Soundness	Learner-centered and interdisciplinary. Relates information to learners' lives.	
Usability	Text is well-organized. Materials needed are easy to obtain.	Facts may need to be updated.

"Just skimmed the surface in most analyses."

"Deals with relevant STS issues and could get students more interested and involved in science and social studies inquiry."

Sharing the Joy of Nature

Nature Activities for All Ages

Written by: Joseph Cornell

Dawn Publications
14618 Tyler Foote Road
Nevada City, CA 95959

phone: (800) 545-7475
(916) 292-3482
fax: (916) 292-4258
e-mail: dawnpub@oro.net

Cost: $9.95

SUBJECTS

Language Arts
Physical Education
Science
Social Studies

IN A NUTSHELL

This book is both a collection of nature activities and a primer in what the author refers to as "flow learning," a process of sequencing activities to allow learners to gain the most from a nature experience. According to this process, there are four stages to nature awareness: awakening enthusiasm, focusing attention, directing experience, and sharing inspiration. The nineteen activities are sorted and classified according to their most appropriate stage, and also indicate concepts taught, suggested location and time for activity, number of participants needed, and special materials, if any, that might be necessary. The activities include an animal clue game, guided imagery, nature bingo, and building a human model of a tree. Also in the book is a reprint of Giono's *The Man Who Planted Hope and Grew Happiness.* The text is illustrated with photographs and drawings, and includes a list of resources and references, an index, and an activity chart.

Grade Level
preK-adult

Length
168 pages

Date Published
1989

THE BOTTOM LINE

"A helpful book for developing appreciation and awareness for nature."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Open to inquiry.	
Depth	Very strong emphasis on awareness of nature.	Little focus on the development of concepts.
Emphasis on Skills Building	Develops creative thinking. Makes strong use of observation skills.	
Action Orientation	Not Applicable.	
Instructional Soundness	Employs different senses and different ways of learning.	Moderately interdisciplinary.
Usability	Activities are clear, long-lived, adaptable, and easy to use.	

"Diverse sensory involvement makes learning fun, and is a precursor to acquiring knowledge and facts."

"This is a soft and fuzzy approach to nature and can bring out one's poet and artist."

STREAMS

Science Teams in Rural Environments for Aquatic Management Studies

Written by: Frederic R. Wilson & Timothy E. Julian

Office of Environmental Education
Bureau of Curriculum and Academic Services
333 Market Street
Harrisburg, PA 17126-0333

phone: (717) 783-6994
website: http://www.ems.psu.edu/HAMS

Cost: No charge

SUBJECTS

Mathematics
Science
Social Studies

IN A NUTSHELL

STREAMS involves students in the study of local aquatic systems to develop a sense of environmental issues. Designed primarily for rural students, the program seeks to increase awareness of the water resources and to involve students directly in water quality monitoring and their community actions. Students explore seventeen different topic areas, including recognition of household pollutants, water treatment, erosion, and the use of computers to write reports. Each lesson lists a goal, objectives, general procedures, assessment opportunities, and teacher resources. The text identifies specific watersheds and landmarks for field studies and research. Identified resources include videos, literature, slides, teacher handouts, and equipment. Many activities involve the use of computers, water testing kits, and other laboratory equipment. Twelve community action projects undertaken by students after completing the course are cited. The text includes a program overview, blank data sheets, important contacts, and recommended audiovisual materials. Correlations to standards for science and mathematics are also cited.

Grade Level
5-8
Length
70 pages
Date Published
1996

THE BOTTOM LINE

"Conceptually very strong. Encourages students to investigate their relationship to this vital resource."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Incorporates field work, discussion, and decision making based on direct observation.	Does not provide background information.
Depth	Concepts build on each other and are explored through field-based activities. Uses water to link several subjects together.	Awareness is limited to local waterways and local issues.
Emphasis on Skills Building	Activities encourage brainstorming, small group problem solving, communication skills, and collection, analysis and interpretation of data.	
Action Orientation	Includes a variety of activities for school and community involvement.	Little information given to show that students' actions have an effect on water quality.
Instructional Soundness	Uses diverse instructional methods. Connects material to everyday life. Encourages team teaching and networking between schools in watershed.	
Usability	Materials are reproducible, clearly labeled, easily used and reused.	Some required materials are expensive or may be difficult to acquire. Not readily adaptable to all areas of the country.

"Action component should follow data analysis, rather than precede it."

"Much is left to the resourcefulness of the educator to supplement with personal experiences, handouts, visuals, resource professionals, and hands-on activities."

Themeworks: Night Time

IN A NUTSHELL

This unit is designed to teach very young children about night time and what different animals and plants do when it becomes dark. The unit begins with a lesson in which students reenact their own bedtime rituals. Using songs, art projects, pantomime, recipes, readings, and games, the students explore both their own and the natural environment's response to nightfall, study stars and moon phases, and learn about some common nocturnal animals such as bears and owls. The unit ends with a simulated campout, conducted in the child's classroom, where students pretend to cook camping meals, tell ghost stories, and practice identifying sounds they might hear on an actual camping trip at night. The text provides masters for cards and worksheets, guitar chords for songs, and a curriculum sheet showing the subjects addressed in each activity.

Grade Level
preK-2

Length
64 pages

Date Published
1991

Written by: Joan Westley

Windows on Beginning Science Series
Creative Publications
5623 W. 115th Street
Alsip, IL 60482

phone: (800) 624-0822
fax: (800) 624-0821
e-mail: www.mathland.com

Cost: $18.95

SUBJECTS

Fine Arts
Health
Language Arts
Science

THE BOTTOM LINE

"A wide variety of skills are used by students in activities that seem like fun."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Provides a multicultural perspective on nighttime. Facts are few but appear accurate.	
Depth	Materials are strong on awareness. Addresses night in many different contexts.	
Emphasis on Skills Building	Students are engaged in observation, comparison, counting, problem solving, and decision making.	Does not address applying skills to any issues, other than student's fear of the night.
Action Orientation	Not Applicable.	
Instructional Soundness	Appropriate for different learning styles. Makes connections to learners' everyday lives.	
Usability	Well-organized and inviting. Binding is helpful for photocopying. Material can be easily adapted beyond the classroom environment.	

"Activities provide an opportunity for children to transfer newly gained awareness to their lives beyond the classroom."

"I liked the effort to involve parents/guardians in the activities."

Tropical Rainforest

An Activity Guide for Teachers

Educational Resources
Science Museum of Minnesota
30 E. Tenth Street
St. Paul, MN 55101

phone:
(800) 221-9444 ext. 4543
fax: (612) 221-4526

Cost: $7.95

SUBJECTS

Economics
Fine Arts
Science
Social Studies

IN A NUTSHELL

Using crafts, games, and research projects involving household items, these eleven activities encourage students to explore the biology of tropical rainforests and the environmental issues associated with them. Students learn about the geography of rainforests and to observe the interaction of different elements in an ecosystem by creating and conducting experiments in a simple terrarium. Students are asked to consider what actions they would take in certain situations, and are encouraged to see the importance of the rainforests in their own lives by taking note of the many products around them which are derived from rainforest plants. Attention is given to the rate of extinction in the rainforest and the benefits of developing a sustainable economy in rainforest nations. The material was designed to be used in conjunction with the Omnimax film *Tropical Rainforest*, but can be used independently as well. The text features maps, diagrams, an annotated bibliography, and a list of things that students can do to help the rainforest.

Grade Level
K-8

Length
35 pages

Date Published
1992

THE BOTTOM LINE

"Concepts that are difficult to visualize, such as how fast the rainforest is disappearing, are presented in ways that students can understand."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information is factually accurate.	Gives little attention to point of view of people living in the rainforest. Material has a bias, assumes that rainforests need protection and encourages students to do so. Does not list sources of information.
Depth	Develops awareness of relevance of rainforest issues.	No conceptual framework provided.
Emphasis on Skills Building	Develops critical and creative thinking skills.	
Action Orientation	Dilemma cards activity develop sense of personal stake and responsibility.	Provides few ideas of specific actions which can be taken. Many suggestions are vague or unclear.
Instructional Soundness	Activities are student-centered and involve different learning styles.	
Usability	Activities involve materials that are readily available. Handouts can be easily copied. Instructions and illustrations are clear.	Provides no follow-up support.

"Because of the bias, you will need more complete, balanced material to complete this curriculum."

"Ideas are varied and would keep students thinking and busy."

The Universe at Your Fingertips

An Astronomy Activities and Resource Notebook

Edited by: Andrew Fraknoi

Project Astro
Astronomical Society
of the Pacific
Catalog Department
390 Ashton Avenue
San Francisco, CA 94112

phone: (800) 335-2624
(415) 337-1100
fax: (415) 337-5205

Cost: $29.95
discounts available
for multiple orders

SUBJECTS

Science
Social Studies

IN A NUTSHELL

The contents of this book are designed to provide the teacher with a collection of astronomy lessons and activities, rather than a complete or sequenced curriculum. The first four sections provide introductions to the materials, information about astronomy in general, and suggestions for teaching astronomy effectively. Each of the thirteen activity sections that follow contains activities about a particular area of astronomy, such as planets, space exploration, star systems, astronomy in different cultures, and astronomers' tools. The types of activities include making astronomical observations, constructing models to demonstrate sizes and distances in the solar system, a bingo game, and experiments with light and spectra. Each activity section includes an introduction to teaching the activities, a grade level chart, and a background article on the highlighted topic. A cover sheet explains what each activity is about, what the students will do, and what concepts, skills and ideas the students will learn. The activities are drawn from numerous sources and vary in structure.

Grade Level
3-12

Length
800 pages

Date Published
1995

THE BOTTOM LINE

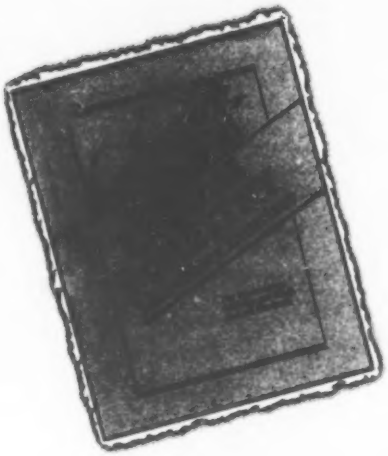
"*Debunking Pseudoscience* section contains activities to help students test and think through claims of astrology, UFOs, etc."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Materials encourage inquiry. Clearly states sources of information. Diversity is shown by inclusion of women and information from other cultures.	Avoids issues such as the Big Bang theory and the age of the universe.
Depth	Facts are presented or discovered to support concepts. Attention is given to global and astronomical scales.	Material is not built around a strong conceptual framework.
Emphasis on Skills Building	Clearly lists skills for each activity. Encourages critical thinking, and use of scientific method, analogies and models.	
Action Orientation	Not Applicable.	
Instructional Soundness	Materials are learner-centered, interdisciplinary, and stress education beyond the classroom. Clearly states goals, objectives, and appropriate grade levels. Makes connections to learners' everyday lives.	
Usability	Lessons are long-lived and can be adapted for new information. Instructional materials are accessible and inexpensive.	

"The explanations are clear, written at an adult level but without much technical jargon."

"There is a tremendous amount of information here."



Urban Forestry Lab Exercises

Written by: Gary Kupkowski, Joseph Cave, Mark Prichard, John Turner, Gary Watson, & John Dwyer

The International Society of Arborculture
P.O. Box 3129
Champaign, IL 61826-3129

phone: (888) 472-8733
fax: (217) 355-9516

Cost: No charge

SUBJECTS

Language Arts
Mathematics
Science

IN A NUTSHELL

The lessons in this manual are designed to inform students about trees in urban settings, provide them with experience in collecting data about trees, and give them the opportunity to participate in the development of a local urban forest. The first two chapters of the text list equipment that will be needed for the lessons for various age groups and provides three activities appropriate for all grades. The three remaining chapters contain urban forestry exercises categorized for elementary, middle, and high school studies. The studies range from tree planting and identification to investigating soil temperatures, pH readings, and calculating the board footage in a given tree. Each exercise contains background information, the targeted age group, learning objectives, explaination of the procedures, references for further study, student worksheets, discussion questions with answers, and important vocabulary. The appendix provides word search puzzles and quizzes (along with answers) and contains a glossary.

Grade Level
K-12

Length
200 pages

Date Published
1996

THE BOTTOM LINE

"Many of the activities are unique and can be done in inner cities."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Factually accurate. Allows students to experiment and collect own data.	Some statements may show a subtle bias against some land use practices.
Depth	Breaks material down into general and more advanced concepts.	Does little to address environmental issues involving forestry.
Emphasis on Skills Building	Students practice data collection and analysis, as well as developing and testing hypotheses.	Little emphasis on creative thinking skills or processing implications of findings.
Action Orientation	Encourages children to plant trees and develop a local arboretum.	
Instructional Soundness	Activities are experiential, learner-centered and hands-on. States goal and objectives for each lesson.	
Usability	Procedures are clear and easy to follow.	Some equipment may be difficult to acquire. May not provide sufficient teacher preparation.

"I just wish I had the time to do all the activites that I want to do."

"Tends to look at trees as a commodity."

Waste in Place

Keep America Beautiful, Inc.
1010 Washington Blvd.
Stamford, CT 06901

phone: (203) 323-8987
fax: (203)325-9199
e-mail: keepamerbe@aol.com
website: www.kab.org

Cost: $40.00

SUBJECTS

Fine Arts
Health
Language Arts
Mathematics
Physical Education
Science
Social Studies

IN A NUTSHELL

This is a collection of thirty-five activities designed to help students make informed decisions about solid waste issues. Five of the seven chapters focus on a different aspect of the solid waste issue: understanding waste management, litter prevention, waste reduction, recycling/composting, and the use of waste in energy production. Two additional sections are dedicated to enrichment and an overview of solid waste management. Each activity lists objectives, materials needed, vocabulary, assessment suggestions, and enrichment ideas. Students create stamps out of reused materials, trade unwanted items with other students, participate in relay races with recyclable materials, make their own recycled paper, clean up and beautify littered areas, and conduct experiments to determine how quickly certain products photodegrade. The text includes student materials, a glossary, an overview of municipal solid waste, and sample letters to parents. The curriculum also comes with a colorful two-sided poster.

Grade Level
K-6

Length
146 pages

Date Published
1997

THE BOTTOM LINE

"Quite a few of the activities are thorough, providing a lot of information."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Balanced presentation. Students are given an opportunity to examine differing sides of issues.	Cites some, but not all, sources of information. Does not identify expertise or affiliation of reviewers.
Depth	Activities promote students' awareness of solid waste and its alternatives. Exposes students to new concepts and ideas.	
Emphasis on Skills Building	Promotes investigation and problem solving. Involves both written and oral communication skills.	Lacks emphasis on issue analysis.
Action Orientation	Instills sense of personal responsibility by demonstrating different disposal options for items at home.	
Instructional Soundness	Materials have strong interdisciplinary emphasis. Uses variety of instructional methods. Includes assessment section for every activity. Clearly states goals and objectives.	Most activities are classroom-based and teacher-directed.
Usability	Instructions are clear. Needed materials are reasonable and inexpensive.	Lacks additional resources and follow-up activities.

"A whole range of solid waste issues are addressed well."

"Many of the enrichment activities propel students to look creatively at solutions to environmental problems."

What Do We Need to Live on Planet Earth?

A Case Study of Traditional Rural Life in East Africa

Written by: Carol Murphey & Kendra R. Wallace

Stanford Program on International and Cross-Cultural Education (SPICE) Institute for International Studies
Littlefield Center, Room 14C
Stanford, CA 94305-5013

phone: (800) 578-1114
fax: (415) 723-6784
e-mail:
hf.gxm@forsythe.stanford.edu
website:
http://www-iis.stanford.edu

Cost: $29.95

SUBJECTS

Economics
Language Arts
Social Studies

IN A NUTSHELL

This curriculum engages students in the study of two civilizations very different from their own, specifically the Masai and Kikuyu peoples of eastern Africa. The focus is on understanding what these cultures require to survive in their respective environments, how and why some survival strategies work, and to compare and contrast them with the students' own culture and needs. The curriculum consists of six lessons, lasting from thirty to sixty minutes in length, each of which involves a group activity and project. The book lists complete instructions for the teacher, including materials, identification of different skills, teaching towards different learning abilities, suggestions for assigning roles for students within groups, thoughts on rotating and timing activity assignments, optional activities, and preparation guidelines. The book includes full-color student activity cards, maps, and lists of reference materials.

Grade Level
2-4

Length
59 pages

Date Published
1995

THE BOTTOM LINE

"Activites let students make their own conclusions and make connections between different societies and cultures."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Provides balanced presentation of different points of view. Invites inquiry and discussion. Describes two different African societies to employ diversity. Lists reviewers and sources of information.	Unclear if East Africans or people with direct knowledge of the cultures examined were involved in review of curriculum.
Depth	Thorough treatment of concept of survival in different contexts. Makes connection between human and animal needs.	
Emphasis on Skills Building	Encourages critical thinking, group work, and problem solving skills. Provides opportunity for applying skills to issues.	Misses opportunities to do science experiments relevant to the curriculum.
Action Orientation	Not Applicable.	
Instructional Soundness	Involves a variety of learning styles. Clearly states goals and objectives.	Some material may be too advanced for stated age group.
Usability	Easy to use and copy materials. Provides sources of additional information. Information is long-lived.	Lacks follow-up activities.

"Encourages awareness of all organisms' needs."

"Encourages students to identify and conserve what is needed in the environment."

Who's Endangered on Noah's Ark?

Literary and Scientific Activities for Teachers and Parents

Written by: Glen McGlathery & Norma J. Livo

Libraries Unlimited Inc.
Teacher Ideas Press
P.O. Box 6633
Englewood, CO 80155-6633

phone: (800) 237-6124
(303) 770-1220
fax: (303) 220-8843
e-mail: lu-books@lu.com
website: http://www.lu.com

Cost: $22.00

SUBJECTS

Fine Arts
Language Arts
Science

IN A NUTSHELL

This book uses literature and folklore as a gateway to understanding the habits and history of ten endangered species: wolves, bears, elephants, tigers, leopards, California condors, northern spotted owls, bald eagles, whooping cranes, and alligators. Each of the ten chapters begins with a complete legend from a culture that has lived close to the animal, as well as information about the animal's folklore from around the world. A discussion follows of the animal's behavior, physical description, habitat, range, reasons for endangerment, and conservation efforts. Activities are suggested regarding the study of each animal, including drama, songs, sculpture, writing exercises, creating animal masks, and conducting research into issues involving endangered species. Each chapter is annotated and provides a reference bibliography. The text includes resource information, suggested readings, and an index. Illustrations include drawings, maps of both current and historic ranges of animals, charts, and facsimiles of newspaper articles.

Grade Level
K-12

Length
173 pages

Date Published
1992

THE BOTTOM LINE

"This is a helpful resource on endangered species that ties in art projects, native stories and folklore."

101

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Factual information is clearly referenced. Materials reflect diversity and encourage inquiry.	
Depth	Book acknowledges feelings, experiences, and attitudes that shape environmental issues. Presents concepts in context.	Lacks a clear conceptual framework.
Emphasis on Skills Building	Involves critical and creative thinking. Students are encouraged to come to their own conclusions regarding each animal's importance.	
Action Orientation	Not Applicable.	
Instructional Soundness	Activities are interdisciplinary and encourage learners to construct their own knowledge base.	Goals and objectives are not clearly stated. Not all materials are connected to everyday life. Relies largely on classroom and research activities.
Usability	Adaptable to different ages and abilities.	Statistical data will require updating. Many activities have no clear direction or purpose.

"Using current, real stories of animal encounters adds to the relevance of these materials."

"Little more than a collection of folktales/stories owing much to bibliographies."

Why Design?

Activities and Projects from the National Building Museum

Written by: Anna Slafer & Kevin Cahill

Independent
Publishers Group
814 N. Franklin Street
Chicago, IL 60610

phone: (800) 888-4741
(312) 337-0747
fax: (312) 331-5985
website: http://
www.ipgbook@mcs.com

Cost: $19.95

SUBJECTS

Economics
Fine Arts
Language Arts
Social Studies

IN A NUTSHELL

This collection of projects and activities is inspired by the Designwise program of the National Building Museum. Relying heavily on journaling, the text is designed for use by individual learners or by educators. Part One focuses on developing learners' awareness of the role of design in the world around them, their understanding of what design is, and the functions it serves. Part One also educates learners about the language and terms used in design. Part Two explains the steps and processes used in making design decisions. Built into this section are step-by-step instructions on identifying and solving a design problem, using pet waste in a public park as an example. The final chapter addresses some of the technical skills involved in design, such as model making, organizing information, and interviewing. Individual lessons list materials needed and provide worksheets, diagrams, and questions for consideration. The book is illustrated with photographs, cartoons, drawings, and charts.

Grade Level
7 & up

Length
198 pages

Date Published
1995

THE BOTTOM LINE

"Covers the basics of how culture represents itself through objects. It is a wonderful general activity book for occasional classroom use."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Very open to inquiry and reflective of cultural diversity. Reviewed by a diverse group of educators and professionals.	Sometimes blurs the line between action and activism. Urban & suburban focus stronger than rural.
Depth	Links design with environmental, cultural, social, and economic concepts. Addresses local, regional, and global impact of design decisions.	
Emphasis on Skills Building	Stresses critical and creative thinking skills. Enables students to apply their skills to the design process.	
Action Orientation	Strong on personal responsibility and self-efficacy.	
Instructional Soundness	Material is very learner-centered and makes use of a variety of learning styles. Builds upon prior learning.	Provides few notes for educators. Does not specify objectives. May be better suited for grades 9-12.
Usability	Information is clear, logical, and presented in an engaging manner. Material should be long-lived. Contains a subject and skills index.	Lacks ongoing teacher support.

"Uses normal surroundings, such as the design and layout of one's bedroom, to connect environmental design to everyday life."

"A valuable resource for educators who cover sustainable development."

WILD About Elk

An Educator's Guide

Written by: Carolyn Duckworth

Council for Environmental Education / Project WILD
707 Conservation Lane
Suite 305
Gaithersburg, MD 20878

phone: (301) 527-8900
fax: (301) 527-8912
e-mail: natpwild@igc.apc.org
website: eelink.umich.edu/wild

Cost: $7.00
Workshops may be available.

SUBJECTS

Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

This educator's guide to teaching about elk and their importance is designed to be used in conjunction with a video, a traveling trunk, and a poster. The first four chapters provide information about elk natural history, range, habitat, feeding habits, natural predators, and importance to Native Americans. Chapters five through seven discuss efforts to track, manage and conserve elk populations, and provide suggestions on where to find and appreciate elk. Seven activities close out the book; four are new, and three are adapted from earlier *Project WILD* collections. These activities deal with migration, carrying capacity, antlers, and some of the issues involved in living near elk. Each activity lists group size, setting, duration, vocabulary, subjects, skills, and connection to Project WILD conceptual framework. The book is illustrated with numerous photographs, drawings and maps, and includes student pages, cards, tables, a glossary, and sources of additional information.

Grade Level
4-12

Length
80 pages

Date Published
1994

THE BOTTOM LINE

"Does not intend to produce elk biologists — depth is reasonably appropriate and can be fine-tuned to a number a different groups."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Cites references. Presents solid scientific information. Attempts to give balanced presentation of issues.	Affiliations of reviewers/ field testers not mentioned.
Depth	Provides general awareness of elk issues and science. Incorporates concepts well.	
Emphasis on Skills Building	Includes some creative and critical thinking skills. Role play requires students to understand and articulate different perspectives.	Most activities are teacher-driven, dealing mostly with understanding content. Less emphasis on the development of higher order skills for older students.
Action Orientation	Text gives historical examples of actions taken to protect elk.	
Instructional Soundness	Material is interdisciplinary and provides a variety of methods for learning. Goals and objectives are clearly stated.	Relevance is strongest for those living in or near elk country.
Usability	Text is easy to read. Instructions are clear and logical.	Specified age range (grades 4-12) may be too broad.

"Provides basic elk ecology concepts and attempts to provide sufficient information to lead to ecologically sustainable conflict management without defining the outcomes."

"Excellent basic text for developing awareness/interest in elk."

Wildlife
(middle school unit)

Written by: Bob Miller,
Kim Stokely, & Tory Finley

Adopt-A-Watershed
Program
P.O. Box 1850
Hayfork, CA 96041

phone: (530) 628-5334
fax: (530) 628-4212
website: http://
www.tcoe.trinity.k12.ca.us/aaw/

Cost: $67.00

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science
Social Studies

IN A NUTSHELL

The middle school module of the *Adopt-A-Watershed* curriculum uses both new and reprinted exercises and materials to educate students about wildlife adaptation, evolution, and ecology. Using controlled experiments, field study, simulation games and other activities, students develop an understanding of how wildlife populations change over time, how different species interact, and how human populations affect wild animal populations. Some of the activities are recommended for specific times of the year or are able to incorporate data from previous years' classes. The nineteen lessons include suggestions for teachers around sizing of groups, safety instructions for field trips, building student interest in the project, and making the curriculum relevant to the local area. The unit culminates with students developing a major piece of work to summarize what they have learned. Additional features include sources of information and materials, activity guides, a complete list of equipment needed, transparency masters, and a matrix showing concepts, projects and grade levels for the entire curriculum.

Grade Level
7-8
Length
104 pages
Date Published
1993

THE BOTTOM LINE

"Strong in involving the community and developing long-term research projects."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Presents a range of perspectives, particularly when discussing controversial issues. Many exercises are inquiry-based.	Does not cite many sources of information or identify those who developed and reviewed curriculum.
Depth	Strong on developing awareness of natural world. Builds understanding of dependence of human life on a healthy environment.	Focus is on vertebrate wildlife.
Emphasis on Skills Building	Encourages creative and critical thinking skills. Provides opportunities for developing interpersonal and group skills.	
Action Orientation	Two lessons specifically address student involvement. Opportunities for students to reflect on their actions are provided throughout.	
Instructional Soundness	Very learner-centered. Builds on previous knowledge and research. Uses indoor/ outdoor activities. Encourages collaboration.	Objectives for individual lessons are not always clear.
Usability	Layout is clear, logical, easy to use, adaptable to other states. Lists teacher resources and support services. Three-hole binder makes use easy.	Lacks table of contents and index.

"Relies on sound theories and well-documented facts."

"A broader range of possible solutions could be built into more of the activities."

Worms Eat Our Garbage

Classroom Activites for a Better Environment

Written by: Mary Appelhof, Mary Frances Fenton, & Barbara Loss Harris

Flower Press
10332 Shaver Road
Kalamazoo, MI 49024

phone: (616) 327-0108
fax: (616) 327-7009
e-mail:
nancy@wormwoman.com
website:
http://www.wormwoman.com

Cost: $22.95

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science

IN A NUTSHELL

This collection of activities originated from the response to the author's earlier book, *Worms Eat My Garbage*, and to requests for specific activities relating to worms and composting. The 155 activities in this book are divided into three chapters: The World of Worms, which explores worm anatomy, size, natural history and behavior; Worms at Work, which addresses the use of worms in decomposing garbage; and Beyond the Bin, which focuses on garbage, solid waste, recycling, and other related topics. The activities are presented as student worksheets, most of them only one page in length. Types of activities include drawing pictures of worms, story telling, measuring the amount of garbage put into a worm bin, conducting an attitude survey about worms, charting observations of the tunnels made by the worms, and conducting experiments to determine what items might decompose in a landfill. The book also includes planning sheets, calendars, metric conversion charts, a listing of resources and enrichment materials, suggestions for teachers, a bibliography, a glossary, and an index.

Grade Level
K-12
Length
214 pages
Date Published
1993

THE BOTTOM LINE

"This is a comprehensive guide, but falls short in matching objectives to specific lessons."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Contains factual information.	
Depth	Emphasizes awareness. Includes both general and specific information. Makes connections between worm composting and other issues (e.g. solid waste).	
Emphasis on Skills Building	Includes some measuring, classification, and identification skills.	
Action Orientation	Instills a personal stake at the local level.	
Instructional Soundness	Learner-centered. Many hands-on, interdisciplinary activites.	Activities lack objectives and outcomes. Too many activities are centered around worksheets.
Usability	Instructions are easy to read and to use. Materials are easily obtained.	Information on worms is scattered throughout the book rather than in a single summary.

"Very useful. Covers all aspects of worms."

"A worm bin in the classroom is an excellent idea and lends itself to lots of inquiry-based activities."

Reviews In Brief

The following materials do not contain a substantial teacher's guide and are therefore presented in a shorter format. These resources were reviewed using the same rigorous guidelines as those in the preceding section of this book.

These reviews are provided to allow individual educators to make their own decisions about the material and to determine how they can best be used.

The Big Empty

IN A NUTSHELL

Edited by: Richard Brook, Shelly Smith & Mary Tisdale

Bureau of Land Management
The Environmental Education & Volunteers Office
1849 C Street NW
MS-406LS
Washington D.C. 20240

phone: (202) 452-5078
fax: (202) 452-5199
website: http:/www.blm.gov/education/education.html

Cost: No charge. Material can be downloaded for use from the website.

SUBJECTS

Science

These materials consist of an article and two-sided poster describing the ecology and diversity of the Great Basin region of the western United States. They provide information about the challenges faced by the ecosystem and identify mining, grazing, tourism, the importation of exotic plant species, and other environmental issues. Efforts to restore and conserve the area are also discussed. The reprinted article also features twelve suggestions for activities to help students understand the region's location, ecosystem, geology, and climatic features. The activities include both research exercises and experiments.

Grade Level
5-8

Length
8 pages

Date Published
1995

What the REVIEWERS Said!

Strengths Noted / Other Considerations

The information provided is current, accurate, and without noticeable bias. The activities were described only briefly and lacked important elements, such as grade level and objectives. None the less the reviewers found them to be helpful, interdisciplinary, easily adaptable, and useful as supplemental material. Resources are provided for further information. The material emphasizes facts, and is not presented in the form of specific lesson plans.

Coral Kingdom

Digital Studios
209 Santa Clara Avenue
Aptos, CA 95003

phone: (800) 499-3322
(408) 688-3158
e-mail: nolan@cyberlearn.com
website:
http://www.cyberlearn.com

Cost: $79.00 Lab packs and site licences are also available.

SUBJECTS

Science

IN A NUTSHELL

This colorful CD-ROM program for Macintosh & Windows allows students to explore marine biology. Students examine a number of underwater habitats and ecosystems, and investigate the effect of human activity on them. The program consists of four different simulated missions, each of which involves an underwater expedition to gather information at a different location in Hawaii or Micronesia. Also included are several slide show narratives on issues; a catalog listing different species of fishes and other organisms found on the program; and a diagram discussing fish anatomy. The guide includes transcripts of the narratives, instructions for classroom use, student and teacher worksheets for the simulated missions, discussion questions, a proposed activity list, recommended reading list, and a listing of organizations involved with marine ecology.

Grade Level
high school
Length
1CD-ROM
180 page guide
Date Published
1995

What the REVIEWERS Said!

Strengths Noted / Other Considerations

Information is accurate, although rather encyclopedic in presentation. The teacher's guide and program tour on the CD-ROM were helpful and well laid out. The graphics and photographs were highly praised. The material was generally considered to be well-organized and user friendly. It was believed to be especially helpful for those with close access to an ocean reef.

Creature Features:

The Delicate Balance of Ecosystems

Environmental Media Corporation
P.O. Box 99
Beaufort, SC 29901

phone: (800) 368-3382
website: http://www.envmedia.com

Cost: $29.95

SUBJECTS

Fine Arts
Language Arts
Science

IN A NUTSHELL

Seven separate short programs make up this videotape. Each program deals with a different aspect of ecology or ecosystems, such as animal adaptations or the nature of a habitat. The video segments are all filmed in Maryland, and many focus on wetland areas and organisms. The accompanying teacher guide lists objectives, a synopsis of the important concepts and vocabulary presented in each lesson, pre- and post-viewing questions, instructional activities, and related books for young readers. Among the activities are journaling, discussions, research projects, crafts such as creating birdfeeders and designing food chain mobiles, a game simulating predator and prey adaptations, and field trips.

Grade Level
3-6

Length
35 minutes & 8 page guide

Date Published
1991

What the REVIEWERS Said!

Strengths Noted / Other Considerations

The video is visually pleasing with high-quality photography and clear narration. Each video segment ends with an unanswered question for the audience. The reference information and pre/post questions in the teacher's guide were well received. Very little diversity is found amidst the professionals interviewed on film. The video content encourages cautious and responsible action with regard to ecosystems, and highlights examples where efforts to repair ecosystem damage has been successful. Some reviewers were concerned that the emphasis on Maryland might make the material less valuable to students in other regions.

Eyewitness Encyclopedia of Nature 2.0

IN A NUTSHELL

This CD-ROM for Macintosh and Windows allows students to explore a variety of wildlife and nature topics. Information is displayed in movies, still photographs, maps, and text, some with accompanying narration. All topics can be accessed from a main menu page; however, subsequent screens are structured to allow access to the information from different contexts and directions. Principle topics include plants and fungi, reptiles, birds, fish, mammals, invertebrates, amphibians, insects, and prehistoric life. Other main headings include: classifications, climate, ecology, the evolution of different species, and efforts at conserving endangered wildlife and habitats. Features include an extensive index, highlighted vocabulary words with text definitions, games, bird calls, and specific information on a number of species. A connection to the internet is also available for further research.

Grade Level
5 & up

Length
CD-ROM

Date Published
1997

DK Multimedia
95 Madison Avenue
New York, NY 10016

phone: (888) 342-5357
(212) 213-4800
fax: (212) 213-5240
website: http://www.dk.com

Cost: $39.95

SUBJECTS

Science

What the REVIEWERS Said!

Strengths Noted / Other Considerations

The program was learner-centered in that the student could choose which direction or topics to pursue. The information itself was clear and concise, and the graphics were well received. However, the setup was confusing and it was not always clear what screens were available, or how to access them. Information was presented largely in an encyclopedic fashion, with little interaction. Some people might object to the presentation of evolution in this program.

Making Waves:
How to Put on a Water Festival

Written by: Amy Killhan

The Groundwater Foundation
P.O. Box 22558
Lincoln, NE 68542-2558

phone: (800) 858-4844
(402) 434-2740
fax: (402) 434-2742
e-mail: info@groundwater.org
website:
http://www.groundwater.org

Cost: $12.00

SUBJECTS

Fine Arts
Language Arts
Science

IN A NUTSHELL

This instructional manual is designed to assist educators in the coordination and execution of a Children's Groundwater Festival. The material is based on the experience of successful festivals in Nebraska and Colorado. The thirteen chapters provide suggestions for resources for water-related activities, volunteer tasks and duties, lists of non-profit organizations with related goals, recruitment of financial assistance, and a proposed planning timeline. The appendices include numerous examples of forms and letters for various purposes related to the planning, scheduling, financing, publicity and evaluation of the event. An index is provided to make the booklet easy to use.

Grade Level
Elementary
Length
58 pages
Date Published
1993

What the REVIEWERS Said!

Strengths Noted / Other Considerations

The manual encourages community involvement and explicitly promotes both awareness of groundwater concerns and responsible behavior. Stressed is the importance of having fun, interactive, hands-on activities at these festivals in order to maximize the impact on children. The materials appear long-lived and adaptable to other kinds of environmental festivals as well. The guide itself is clear and well-written.

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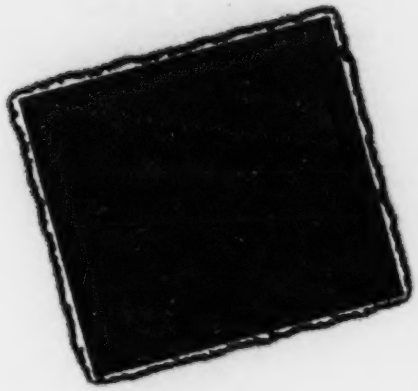

The Mount St. Helens Volcano: Fire & Life

IN A NUTSHELL

This laserdisc explores the natural and human history of Mount St. Helens, explains the forces behind volcanic activity, shows footage of the 1980 eruption, and discusses how the area is changing and recovering. The three principle topics are Mount St. Helens and other volcanoes, plants and animals at Mount St. Helens, and people at Mount St. Helens. The printed material features a detailed table of contents, a list of additional resources and student readings, brief descriptions of twenty related activities, a glossary, and a list of sources of geological supplies. The laserdisc can be run with or without the hypercard program, which allows teachers to select individual items from a computer, provides a scripted narration to accompany the video segment, and includes a feature for creating a video documentary.

Grade Level
7-adult

Length
1 Laserdisc &
180 page text

Date Published
1992

Bullfrog Films, Inc.
P.O. Box 149
Oley, PA 19504

phone: (800) 543-3764
(610) 779-8226
fax: (610) 370-1978
e-mail:bullfrog@lgc.org
website: http://
www.bullfrogfilms.com

Cost: $249.00

SUBJECTS

Science
Social Studies

What the REVIEWERS Said!

Strengths Noted / Other Considerations

Reviewers praised the quality and variety of photographs in the program, and liked the connections made to other volcanoes and geological activity. One reviewer called the material "extraordinarily comprehensive." The index and appendix were identified as strong features, as was the ability to develop a video documentary. Reviewers noted, however, that there is little provided to make the material a curriculum.

Recycle Time and Time Again

& 200 Million Tons of Trash — What Can We Do With It?

SC Johnson Wax and Sons, Inc.
1525 Howe Street
M.S. 029
Racine, WI 53403-5011

phone: (414) 260-2078
fax: (414) 260-0145
website: http://
www.scjohnsonwax.com

Cost: $9.95

SUBJECTS

Science

IN A NUTSHELL

This package consists of a videotape, a poster, and an additional activity sheet. The video is produced by and stars students. It describes solid waste management with a strong emphasis on recycling, in particular steel recycling. The students are led on visits to recycling centers and landfills, and conduct interviews with recycling professionals. Suggestions for recycling at home and at school are offered. The poster shows four options for dealing with solid waste (recycling, composting, incineration, landfill) on one side; five activities related to waste are listed on the other. A sixth activity, which involves both the video and the poster, is found on an accompanying sheet.

Grade Level
6-8

Length
16 minutes

Date Published
1995

What the REVIEWERS Said!

Strengths Noted / Other Considerations

The video features students of diverse ethnicity. It encourages the audience to recycle, and shows the future consequences of not managing waste effectively. The poster activities are experiential and offer several different ways of teaching. However, the material focuses on steel can recycling at the expense of other recyclables, and does not mention the energy costs involved in recycling. At one point in the video a youngster throws away a compostable apple core after chastising another for not recycling an aerosol can. Although the information appears to be current, it may become outdated as lifestyles and technologies change.

Volunteers Teaching Children:

A Guide for Establishing VINE Ecology Education Programs Kit

Written by: Karen S. Hollweg

NAAEE Publications &
Membership Office
P.O. Box 400
Troy, OH 45373

phone & fax: (937) 676-2514
website: http://www.naaee.html

Cost: $56.50 for NAAEE members
$66.50 for non-members

SUBJECTS

Science

IN A NUTSHELL

VINE (Volunteer-led Investigations of Neighborhood Ecology) is a program which allows adult volunteers to lead school groups on brief explorations of urban ecology. The materials provide volunteers with activities to engage students in hands-on investigations of animal and plant life in their own school-yard or local area. Simple instructions are given for a variety of explorations, many of which are drawn from *OBIS*, *Project Learning Tree*, or other well-known collections. The guide also provides concrete information for teachers, parents or others interested in setting up a program, such as fund raising, selecting a steering committee, establishing a budget, and conducting evaluation. One of the videotapes contains step-by-step information for volunteers in how to lead groups of children through experiences. The kit consists of a text (Guide), two videotapes, five *OBIS* investigations, and 30 small magnifying glasses for use in the investigations.

Grade Level
3-4

Length
1 kit w/ guide & videotapes

Date Published
1995

What the REVIEWERS Said!

Strengths Noted / Other Considerations

Both videos show ethnically diverse student populations and a variety of volunteers. The activities are strong on teaching awareness of the natural world, but not all activities have goals or objectives, and they are not coordinated in a conceptual framework. The materials are clear, well-organized, and are well suited to instructing volunteers who have little experience with youth or with the environment. The activities are hands-on, very learner centered, and are designed to "spark interest" in the students.

The Water Story

Project WET
201 Culbertson Hall
Montana State University
Bozeman, MT 59717-0057

phone: (406) 994-5392
fax: (406) 994-1919
e-mail:
rwwet@msu.oscs.montana.edu
website:
http://www.montana\wwwwater

Cost: $25.00 for 30 copies

SUBJECTS

Language Arts
Science
Social Studies

IN A NUTSHELL

This booklet contains five activities for younger children about water. The activities include a board game where students travel about as water molecules, a maze that follows water through a purification plant, and a crossword puzzle. The booklet also includes maps showing water bodies near major cities and water use in different societies, and a drawing showing items related to water use in the early 1900's. Answers to the exercises are given on the final page. One page suggests ways that students can conserve water and prevent water pollution at home or at school. A poster of a rainstick is found at the center of the booklet, along with a discussion of crafts and artifacts related to water in different societies.

Grade Level
3-4

Length
16 pages

Date Published
1995

What the REVIEWERS Said!

Strengths Noted / Other Considerations

There is a lot of information in this brief guide. It stresses the importance of water and encourages learners to apply their knowledge to action. Some reviewers found the instructions and information confusing. The reading level of the text does not appear to be consistent with skill level required to complete the activities. Reviewers felt that it would be appropriate as a supplement to an existing curriculum, or as an activity book for quiet time.

What's Wrong with this Picture?

IN A NUTSHELL

Edited by: Elizabeth Rieben

Bureau of Land Management
The Environmental Education & Volunteers Office
1849 C Street NW
MS-406LS
Washington D.C. 20240

phone: (202) 452-5078
fax: (202) 452-5199
website: http:/www.blm.gov/education/education.html

Cost: No charge. Material can be downloaded for use from the website.

SUBJECTS

Mathematics
Science

This color poster features a number of invasive plant species on one side, and gives background information and six activities regarding invasive and native plants on the other. The text describes the damage caused by invasive weeds in North America, discusses the definition of "weed," and mentions steps that can be taken to control invasives. Some of the activities are classroom based, and others require walks or trips outside to collect seeds, plant gardens, or perform community projects. A list of resources for further information is provided, as well as suggestions for the content of a public awareness campaign. An example is given of a successful community project performed by a school group.

Grade Level
7-9
Length
1 poster
Date Published
1996

What the REVIEWERS Said!

Strengths Noted / Other Considerations

The poster was found to be interesting and eye-catching. The information is helpful, accurate, and fair. The activities themselves are thought-provoking and encourage analytical and creative thinking and allow students to develop their own conclusions. Students develop a personal stake in the issue and are able to become directly involved in making a difference in the local environment. The activities appear to be adaptable to any community.

Appendices

Curriculum Matrix

Publisher Index

Author & Editor Index

Feedback Forms

Title & Page Number	Grade Level	Economics	English/Lang. Arts	Fine Arts	Health/Physical Ed.	Mathematics	Science	Social Studies	Multimedia	Video	Print
		Subjects							Medium		
Activities for the Changing Earth ..... p 6	6-12		x	x		x	x				•
The A, B, C's of Recycling ..... p 8	intermed.		x	x		x	x	x			•
Arctic Animals ..... p 10	K-8		x	x		x	x	x			•
The Big Empty ..... p 106	5-8						x				•
Botany for All Ages ..... p 12	K-adult		x	x		x	x				•
Closing the Loop ..... p 14	K-12	x	x	x	x	x	x	x			•
Coral Kingdom ..... p 107	HS						x		•		•
Creature Features ..... p 108	3-6		x	x			x			•	•
Cycling Back to Nature—Soils Alive ..... p 16	5 & up						x	x			•
Discovering Salmon ..... p 18	4 & up		x	x		x	x				•
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Atmosphere (Weather, Climate & Quality)	Aquatic	Biodiversity	Ecology	Energy	Env. Issues	Forests/Plants	Geology & Soils	Population	Resource Mgmt.	Social Action	Solid Waste	Wildlife		
✓	✓	✓	✓		✓	✓					✓	✓	$10.00	Activities for the Changing Earth
				✓					✓	✓	✓		no charge	The A, B, C's of Recycling
	✓								✓			✓	$6.00	Arctic Animals
		✓	✓			✓	✓		✓			✓	no charge	The Big Empty
			✓			✓							$16.95	Botany for All Ages
✓			✓	✓	✓				✓		✓		$16.95	Closing the Loop
	✓		✓		✓							✓	$79.00	Coral Kingdom
	✓		✓		✓				✓			✓	$29.95	Creature Features
						✓	✓		✓		✓		$5.00	Cycling Back to Nature—Soils Alive
	✓		✓		✓							✓	$4.95	Discovering Salmon
			✓	✓	✓	✓			✓	✓	✓	✓	$19.99	Discovery Curriculum
	✓	✓			✓							✓	$5.00	Diversity of Life
✓	✓		✓			✓	✓			✓	✓	✓	$10.00 Canadian	Earthcycles
			✓		✓							✓	$16.95	Ecology of Creatures We Love to Hate
				✓	✓	✓		✓	✓		✓	✓	$29.95	Economics & the Env.: EcoDetectives
	✓		✓		✓	✓	✓		✓		✓		$20.50/$30.50	Env. Resource Guide: Nonpoint
✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	$29.95	Env. Science Activities Kit
			✓			✓						✓	$8.95	Env. Science—Ecosystems
✓		✓	✓			✓			✓			✓	$39.95	Eyewitness Encyclopedia of Nature
	✓		✓		✓				✓			✓	varies w/ wkshp	Fishways — Intermediate/Senior
			✓		✓							✓	$29.90 set	Flight for Survival
			✓			✓			✓				$24.97 & up	Forest Fires: Disaster or Not?
✓			✓	✓	✓	✓			✓				$8.00	Global Energy Perspective Module #5
✓		✓	✓			✓	✓					✓	$24.95	GrowLab
					✓				✓	✓	✓		$10.00	Hands on Plastics
			✓		✓							✓	$10.00 set	A Home for Pearl
		✓	✓		✓				✓	✓		✓	$7.95	Hunters of the Sky
			✓		✓							✓	$23.50	Investigating Science Through Bears
✓			✓		✓				✓			✓	$19.95/$9.95	Keepers of the Animals
												✓	$10.50	Ladybugs

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Title & Page Number	Grade Level	Subjects							Medium		
		Economics	English/Lang. Arts	Fine Arts	Health/Physical Ed.	Mathematics	Science	Social Studies	Multimedia	Video	Print
Making Waves ... p 110	elem.		✖	✖			✖				●
Mapping Fish Habitats ... p 58	6-10					✖	✖				●
Mount St. Helens Volcano ... p 111	7-adult						✖	✖	●		●
Nature Close-Up Earthworms ... p 60	5-7						✖				●
Nature Puzzlers ... p 62	6-12		✖		✖		✖				●
Ozone Layer Teacher's Guide ... p 64	HS-adult		✖	✖	✖	✖	✖				●
Protected Areas ... p 66	5-7		✖				✖	✖			●
Ranger Rick NatureScope-Geology ... p 68	K-8			✖		✖	✖				●
Ranger Rick NatureScope-Wetlands ... p 70	K-8		✖	✖	✖	✖	✖	✖			●
Recycle Time & Time Again ... p 112	6-8						✖			●	
Rocks, Sand & Soil ... p 72	preK-2			✖			✖				●
Science & Social Issues ... p 74	9-12	✖			✖		✖	✖			●
Sci., Tech. & Society: Populations ... p 76	6-7				✖		✖	✖			●
Sharing the Joy of Nature ... p 78	K-adult		✖		✖		✖	✖			●
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Urban Forestry Lab Exercises ... p 88	K-12		✖			✖	✖				●
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What Do We Need to Live on Planet ... p 92	2-4	✖	✖					✖			●
What's Wrong with this Picture? ... p 115	7-9					✖	✖				●
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Why Design? ... p 96	7 & up	✖	✖	✖				✖			●
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Worms Eat Our Garbage ... p 102	K-12		✖	✖		✖	✖				●

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	✓											✓	$10.50	Mapping Fish Habitats
✓			✓			✓	✓		✓			✓	$249.00	Mount St. Helens Volcano
							✓				✓	✓	$16.95	Nature Close-Up Earthworms
			✓			✓		✓				✓	$19.50	Nature Puzzlers
✓				✓	✓								no charge	Ozone Layer Teacher's Guide
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				✓			✓		✓		✓		$12.95	Ranger Rick NatureScope-Geology
	✓	✓			✓	✓			✓			✓	$12.95	Ranger Rick NatureScope-Wetlands
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							✓						$13.75	Rocks, Sand & Soil
✓				✓	✓			✓	✓	✓	✓		$13.95	Science & Social Issues
				✓	✓	✓		✓	✓	✓		✓	$11.95	Sci., Tech. & Society: Populations
✓			✓			✓						✓	$9.95	Sharing the Joy of Nature
✓	✓				✓								no charge	STREAMS
✓			✓									✓	$18.95	Themeworks: Night Time
		✓			✓	✓			✓	✓		✓	$7.95	Tropical Rainforest
✓								✓					$29.95	The Universe at Your Fingertips
✓			✓			✓	✓		✓				no charge	Urban Forestry Lab Exercises
	✓		✓		✓	✓			✓			✓	$56.50/$66.50	VINE
				✓	✓				✓		✓		$40.00	Waste in Place
✓	✓				✓				✓			✓	$25.00	The Water Story
	✓				✓				✓			✓	$29.95	What Do We Need to Live on Planet
		✓	✓		✓	✓			✓	✓			no charge	What's Wrong with this Picture?
					✓							✓	$22.00	Who's Endangered on Noah's Ark?
					✓				✓		✓		$19.95	Why Design?
			✓		✓				✓			✓	$7.00	WILD about Elk
	✓		✓		✓							✓	$67.00	Wildlife
						✓	✓				✓	✓	$22.95	Worms Eat Our Garbage

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Through the **National Project for Excellence in Environmental Education**, NAAEE is taking the lead in establishing guidelines for the development of balanced, scientifically accurate, and comprehensive environmental education programs. Quality environmental education programs facilitate the teaching of science, civics, social studies, mathematics, geography, language arts, etc. These guidelines will help educators develop meaningful environmental education programs that integrate across and build upon the high standards set by the core disciplines.

The **National Project for Excellence in Environmental Education** is a multi-year program designed to identify and provide examples of high quality environmental education practice. The Project is focusing on four interrelated efforts: 1) publication of *Environmental Education Materials: Guidelines for Excellence*; 2) creation of a series of educators' resource guides to quality environmental education materials (*The Environmental Education Connection — A Review of Resources for Educators* is the first in this series); 3) development of environmental education learner guidelines; and 4) development of a set of recommendations for the preparation and continuing education of teachers and other environmental educators.

The **National Project for Excellence in Environmental Education** is funded by the U.S. Environmental Protection Agency through the Environmental Education and Training Partnership (EETAP) — plus the National Environmental Education and Training Foundation, the National Fish and Wildlife Foundation, Northern Illinois University and World Wildlife Fund. For more information, please contact Bora Simmons, Northern Illinois University, Department of Curriculum and Instruction, DeKalb, Illinois 60115.